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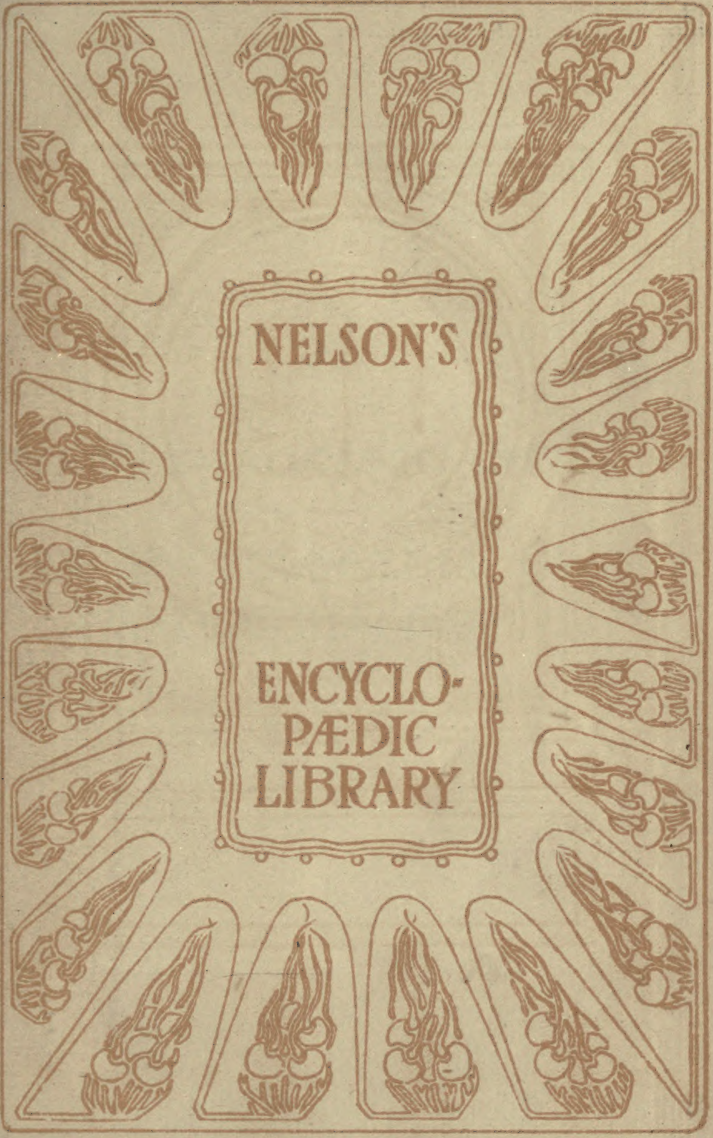

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NELSON'S ENCYCLOPÆDIC LIBRARY

AN ENCYCLOPÆDIA OF INDUSTRIALISM

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PUBLISHERS' NOTE.

THIS Encyclopædia has been prepared for the special purpose which is defined in Dr. Shadwell's Preface. It is not an encyclopædia of economics, and it is not an encyclopædia of social questions at large. Its aim is to give an account of the problems, both practical and theoretical, which arise directly out of our modern development of manufactures. Occasionally these problems exceed the limits of this subject, but in their treatment the special industrial point of view has always been maintained. For example, the volume contains no discussion of tariff or fiscal questions, though these have a close relation to our manufacturing interests, because in their essentials such questions extend far beyond the particular social conditions that we call Industrialism. On the other hand, certain political questions, such as Syndicalism, have been fully dealt with, as owing their origin specially to the industrial classes. The articles have been written by recognized experts, and in most cases are signed with their initials. An Index has been provided to assist the reader.

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PREFACE.

THE word 'Industrialism,' which is loosely used in various senses, is here intended to signify those social and economic conditions which have been brought about by the modern development of manufactures, together with the concomitant 'extractive' and transporting industries. This development, which is the peculiar mark of our age, has been accompanied to a variable extent by many and great changes in every country where it has taken place. They may be summarily classified thus :—

1. Rapid increase of population, and its massed concentration in places convenient for production and distribution, whence arise numerous civic problems, some of which are new, while others, though old, present themselves in new or intensified forms.

2. Great increase of actual and potential wealth, leading, on the one hand, to intense competition, both intranational and international, in production; and, on the other hand, to a ceaseless struggle between the several factors engaged for their share of the product in distribution.

From these two forces spring varied and important results, among which the most prominent are: fiscal systems, designed to promote production; special educational systems, framed to advance knowledge and promote personal capacity; financial operations, aiming at control of production and increased efficiency of management (amalgamation of businesses, kartells, trusts); industrial legislation, intended to protect wage-earners; the organization of labour and capital, or employed and employers, in two opposing camps of constantly extending scope; conflicts and treaties of peace between them in the form of strikes, lockouts, and mutual agreements, with all the mechanism of conciliation boards and arbitration courts.

3. A general and progressive rise in the standard of living, comfort, convenience, and luxury, which again produces innumerable secondary results, economic, social, moral, and religious.

In this volume some of the more important of these aspects of Industrialism are discussed from an objective point of view.

A. S.

[Arthur Shadwell]

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AN ENCYCLOPÆDIA OF INDUSTRIALISM.

Accumulations. See CAPITAL.

Amalgamations. See COMBINATIONS, INDUSTRIAL.

Anarchism. See LABOUR AND POLITICS.

Apprenticeship. See WOMEN AND CHILDREN AND THE LABOUR MARKET; EDUCATION, INDUSTRIAL.

Arbitration. See METHODS OF INDUSTRIAL PEACE.

Averages. See MEASUREMENT OF INDUSTRIAL CHANGES.

Bakehouses. See FACTORY LAW.

Benefit Societies. See FRIENDLY SOCIETIES.

Budgets, Workmen's. See COST OF LIVING.

CAPITAL.

1. *Scope and Meaning of the Term.*
2. *Functions of Capital.*
3. *Origin of Capital.*
4. *Amount of Capital in Use.*
5. *Bibliography.*

'Capital' is a current word in everyday speech. It is commonly used as if its meaning were self-evident, and in nine cases out of ten there is probably no serious danger of misapprehension. There is likewise general agreement that 'capital' now plays a vitally important part or parts in economic life, and that its amount has become vastly greater, and its effect or effects vastly larger, in modern times. We live, every one allows, in a 'capitalistic' era; and if the term 'capitalism' be employed in a quite colourless sense, to indicate a condition of affairs dominated by the existence of 'capital,' there are few who would object to its use as characterizing modern trade and manufacture.

But when we look more closely into the matter, it is found to be less simple than it appears at first sight. There are differences between the sense of the word 'capital' as used by business men in business affairs, and its sense as used by many economists; and among these economists, again, there are divergencies which are not inconsiderable. For, as the German writer Knies has pointed out, differences in definition have meant, not greater or less success in describing a group of objects which every one allows to constitute 'capital,' but a conflict of opinions as to the objects themselves which ought to be included under the name. It is not surprising, therefore, that controversies should have arisen as to the 'functions' or effects of capital, or that actual attempts at the measurement of capital should have disregarded theoretic definition. To clear the way for a consideration either of the place of capital in economic life or of its amount in different times and places, it will, accordingly, be necessary to start with a consideration of the scope and meaning of the term itself.

1. Scope and Meaning of the Term.—There is still some obscurity as to its origin. But it is clear that in the Middle Ages 'the capital' (in Latin *capitale*) was widely used for the principal of a money loan as distinguished from the interest; both 'capital' and 'principal' implying the same thing—namely, that the sum originally lent was the main or chief part of the debt or obligation so contracted. This would seem to have been the most common employment of the term well into the eighteenth century. The most usual term during that period for what we now call a business man's capital was 'stock;' and this is the word used by Adam Smith throughout Book I. of his *Wealth of Nations* (1776). The application of the term ‘capital’ to wealth in general, employed in business, possibly first took place in the case of joint-stock companies; for there was an evident similarity between the parting with a sum of money in the way of loan and the parting with it as a subscription to a common business fund. ‘Capital-stock,’ however, and not ‘capital’ alone, was the ordinary term applied in the first half of the eighteenth century alike to the investments of the Bank of England and to the funds of trading companies.

By the time of Adam Smith it had come to be generally understood that money, in the case of a loan or investment, simply represented so much command of commodities in general; and the trader and manufacturer carrying on an independent business with his own means had also become a common and conspicuous figure. It became the practice, therefore, to speak of the business man's ‘capital,’ and to conceive of it as being made use of, or ‘invested,’ with the intention of obtaining additional gain—in a way roughly parallel to the lending of a capital sum in return for an interest over and above the return of the capital itself.

This is the sort of idea which Adam Smith begins by giving expression to when, in Book II., he comes to a systematic consideration of the topic. When a man possesses ‘a stock of goods,’ he tells us, more than sufficient for ‘his immediate consumption,’ ‘he naturally endeavours to *derive a revenue* from it.’ ‘That part which he expects is to afford him this revenue,’ or, as he says in another passage, ‘to yield a revenue or profit,’ ‘*is called his capital.*’

And such is, beyond doubt, still the meaning universally attached to ‘capital’ in the business world. ‘Capital,’ as currently used, means ‘trade-capital’ or ‘business-capital.’ The comparatively slight modifications that have since taken place in everyday speech have been the result almost entirely of the development of actual practice, and not of conscious reflection. Owing to the greater elaboration of our monetary and credit system, business men do not now usually think of their investible wealth quite as concretely as when Adam Smith spoke of 'a stock of goods.' They usually make use of some such vague term as 'means' or 'resources;' when they speak of their capital as so much 'money,' it is only as representing their command, measured in money, over 'goods' or 'commodities.' In consequence, again, of the abundance of disposable wealth, its essential importance in modern economic life, and the large opportunities now present for its investment, it is now thought of apart from the forms and quantities in which it presents itself in particular cases; as a general power, of which this or that amount may be possessed by this or that owner; so that we now commonly speak of commanding 'capital' instead of 'a capital,' and usually think of the sum possessed by a number of owners as so much 'capital' rather than as so many 'capitals.' In spite of all this, the use of the term is still, as a rule, restricted in ordinary speech to wealth employed for the purpose of obtaining a profit or revenue (material revenue, of course; not immaterial utilities or pleasures) in those ways which constitute what is loosely designated 'business.' When people are consciously classifying their means as either 'capital' or 'income,' 'capital' is commonly made to include investments in Government debts; but when 'capital' is referred to without further particularization, it is undoubtedly 'trade-capital' that stands in the forefront of consciousness. But as 'trade' or 'business' extends its range, common speech tends to enlarge the range of the term 'capital.' Thus, though 'capital' and 'land' are still usually distinguished to-day, as 'stock' and 'land' were by Adam Smith, and people still speak of a landowner who possesses nothing but land as having 'no capital,' still, as soon as land is evidently used for the purposes of 'a business enterprise,' its value is now always included in the 'capital' of its owner. Thus in the attempts made in the United States, both in the federal census and in the census of the several states —for instance, of Massachusetts—to ascertain 'the amount of capital invested in manufactures,' the value of the land owned by manufacturers for business purposes has been included as a matter of course.

The conception of trade or business capital is thus a rough-and-ready one, sufficiently clear for most of the purposes for which the term is likely to be employed in everyday life. It is the 'fund' or basis for 'business undertakings,' and the growth of it as a working conception has necessarily been bound up with the historical development of business undertakings. It implies the existence of the right of property as understood in modern times, and also of a wide 'freedom of contract;' it implies the actual existence of fields of investment such as were only beginning to come into existence in the Middle Ages. It is only when there is such wide scope for investment that any one possessing wealth beyond his desires for personal (or family) consumption can be looked upon as possessing a force or power disposable in any direction he pleases, that the characteristic modern feeling about capital can take shape.

This necessary historical interpretation of 'capital' has been variously expressed. A favourite phrase among German Socialists has been that 'capital is an historical category,' or classification, and not a logical one. The phrase was used by Lassalle (1864); but the idea was expressed in almost identical language by Karl Marx (1859), and it seems to go back at least to Rodbertus (1842). In itself this is obviously a perfectly accurate statement; and while it suggests an opinion that what has come into existence in past history may be profoundly modified and indeed, in its present sense, pass away in future history, it by no means necessarily follows that it must do so. For not only all the large economic terms—such as 'employer,' and 'workman,' and 'rent,' and 'wages,' and 'interest'—but also the most wide-reaching terms for social phenomena—such as 'liberty,' and 'justice,' and 'marriage,' and 'the state'—similarly represent ideas that are historically conditioned. Another form of statement is that of the distinguished Berlin economist, Adolf Wagner, who speaks of 'capital' in the sense we are now considering as 'capital in the historical-legal sense.' This is obviously only a variant of the phrase of Marx, and was avowedly suggested by the argument of Rodbertus.

The historical point of view is the only one from which the actual place of capital in the thoughts of the everyday world can be made intelligible; and it can be readily seen that all developments of conception or language concerning it which have really become common property are the more or less conscious outcome of changes in actual conditions rather than of a superior analysis of unchanged facts. Thus, the distinction between *fixed* and *circulating* capital, which has played so large a part in economic writing since the time of Adam Smith, is merely the result of the fact that modern business requires more and more the investment of wealth in 'plant' besides the provision of wages and material. The improvement on Adam Smith's definition (1776) of fixed capital as 'capital which yields a revenue without changing masters,' which Ricardo (1817) is commonly regarded by economists as having made by defining it as 'capital of slow consumption,' and the further improvement by John Stuart Mill (1848) in the phrase 'capital in a durable shape,' are merely the results of the growing prominence of machinery; and it is significant that while 'fixed capital' has become an ordinary business term, 'circulating' has remained the property of economists.

An example of wider significance is to be found in the distinction between the *owner* and the *user* of capital which is now so clearly recognized both by economists and by the business public. Adam Smith and the older English writers commonly spoke as if the owner of capital himself directed its employment. J. S. Mill, as late as 1848, remarked that 'the control of the operations of industry usually belongs to the person who supplies the whole or the greatest part of the funds by which they are carried on.' And this was probably only about that time ceasing to be substantially accurate. Among English-speaking economists it was Francis Walker who first (1877) pointed out, in such a way as to arrest attention, that 'it is no longer true that a man becomes an employer because he is a capitalist.' The user, as such, of capital (whether he himself owns it or not) Walker proposed to call by the French term 'entrepreneur;' more recent English writers have reverted to the earlier term 'undertaker,' or have coined the word 'enterpriser.' And as a consequence of this generally recognized distinction, the practice has grown up with many economists (for example, Marshall), and in some business circles, of sharply distinguishing between 'interest,' which is spoken of as the 'return to capital as such,' and 'profit,' or the return to enterprise (or 'business management'). Only the amount by which the total gains of a business exceed 'interest on the capital at the current rate' can, from this point of view, be called pure or net profit. But whatever else may be said of this distinction, it is evident it is but the reflection in thought of the actual conditions, which made their appearance as soon as the banking system came into existence to give 'accommodation' to men in business, and which became conspicuous with the growth of the joint-stock system, especially when it developed the debenture or bond method of obtaining capital.

But it takes time, as the previous examples have shown, for even the most visible facts to affect the theorician. For instance, it is still commonly regarded by economists as a peculiarity of the American writer J. B. Clark that he should seek to distinguish (1888) between 'capital' and 'capital-goods;' between the 'value,' 'the fund,' which a business man invests, and which he can (more or less) shift from one investment to another, and the particular concrete things in which from time to time it is actually embodied. But this is not a bit of abstract analysis, but a simple statement of the modern business conception. Capital, until it is actually fixed, is an undifferentiated and mobile power; it is stated in terms of money, not because it is thought of as consisting in coin or any other form of currency, but because money is the only means of measuring the amount of power, the quantum of disposable wealth, in all its several shapes. That when invested it embodies itself in changing forms is obvious enough to people who are accustomed to think of capital as represented by varying assets.

Even the business conception of capital has a certain vagueness or indecision of outline. But the difficulties in the way of mutual understanding thus occasioned have been slight compared with those caused by the diverging definitions of economists. Their departure from current business usage has been due in part to the desire to construct a completely logical category —that is, to devise a definition which should determine, not what is in fact called capital, but what ought to be called capital. And it has been partly due to a more or less unconscious desire to establish some particular view—for instance, as to money, or protection, or the exploitation of the wage-earning class—by a definition which seemed to imply its truth. The departure began with Turgot (1770). Turgot lays down that 'whoever, either from the revenue of his land or from the wages of his labour or of his industry, receives each year more values than he needs to spend, may place this superfluity in reserve and accumulate it. These accumulated values are what is called a capital.' He goes on to explain the various 'employments of capital'—in the purchase of land yielding a rent, in enterprises of industry, enterprises of husbandry, undertakings in commerce, and loans upon interest. What he omits to say is that it is only as destined for such employments and able to find such employments that the world calls accumulations 'capital.' The divergence set going by Adam Smith was much more far-reaching. After defining the capital of an individual in terms exactly representing the current usage, he went on to explain what constitutes 'the capital of a country or society.' It is a comparatively small matter that he now includes in the 'fortune' or capital, both of society and of the individual, 'the acquired and useful abilities' of all its members, on the ground that 'the improved dexterity of a workman may be considered in the same light as a machine which abridges labour.' Clearly, if the business use of 'capital' is the appropriate one, its extension from the wealth outside man to the wealth within man can only be metaphorical; and yet, since Smith's time, far too many pages have been devoted to this purely verbal question. What is more important is that, in setting forth the other constituents of the capital of a country, Smith was led, by his desire to make it parallel in definition with individual capital, to insist that it should afford a revenue *to the nation*, and not only to the individual owner. He therefore excludes 'the whole stock of mere dwelling-houses,' whether their owners get a rent from them or not, on the ground that 'a house itself can *produce* nothing.' Clothes and household furniture are similarly excluded from social or national capital, though they 'sometimes serve in the function of a capital to particular persons;' and in a later chapter he implies that, though 'stock lent at interest is always considered as a capital by the lender,' it is only capital from the national point of view if it is actually employed by the borrower 'in the maintenance of productive labourers, who *reproduce* the value with a profit.'

Thus Adam Smith insensibly passed from the ordinary world's conception of capital as a *source of income* to an abstract philosophical conception of the *means of production.* That the function of much of the wealth which has been produced in the past in assisting further production in the future is an immensely important one no one can deny; but it was unfortunate that it should be called by the same name as something—business-capital—which includes a wider range of wealth, and depends on given historical conditions of ownership and investment. For now with Smith's followers his conception of social or national capital became *the* conception of capital for economic purposes, and usurped the name. 'Private capital,' if referred to at all, was spoken of with a certain condescension, and as an afterthought. According to Ricardo (1817), 'capital is that part of the wealth of a country which is employed in production;' according to J. S. Mill (1848), it is 'wealth appropriated to reproductive employment.' In order to exclude land, the wealth designated 'capital' was sometimes expressly qualified as itself 'the product of labour;' but this was always implied if not explicitly stated. Capital being thus defined from the point of view of production to start with, it is only with an air of tolerance that Mill allows that 'the property of those who live on the interest of what they possess without being personally engaged in production' can be 'regarded as capital,' 'in common language, and with reference to the individual not improperly.' But he hardly cares to say that it is capital even to the individual; he prefers some such non-committal phrase as 'to him equivalent to capital,' or 'virtually capital to the individual.' So far, indeed, did economic tradition manage to get in England from what Marshall has called 'the language of the market-place,' that in the great *New English Dictionary* 'the stock with which' people 'enter into business' is given as the sense of capital in 'commerce,' while 'wealth used as a fund for carrying on fresh production' is given as the definition in political economy; as if political economy had to deal with something else than the 'capital' of commerce.

It would be profitless to follow the various *nuances* of definition, the various attempts to harmonize divergent conceptions in a colourless formula, which have filled so large a chapter in the history of economics since the time of Ricardo. Knies (1873) has restored something like order to chaos by the remark which we began by quoting—namely, that in these discussions what is really at issue is the thing and not the definition. The analysis of Knies, taken up by Wagner and confirmed in different language by Böhm-Bawerk (1888), has made it quite clear that income-gaining capital (the sense of the business world) and productive capital (the sense of most economists) are groups of things which do not necessarily coincide. As the two groups do in fact consist very largely of the same things, not much misunderstanding is, perhaps, ordinarily occasioned when recent economists like Marshall (*Principles*, 5th edition, 1907) pass to and fro between the business and the so-called 'social' conception of capital according to the topic under discussion. It may be remarked, however, that the 'social' conception, in the sense of Adam Smith, Wagner, Böhm-Bawerk, Marshall, and others, can only be given a monopoly of the term 'economic,' if we define Economics as concerned only with the purely physical question of the production of commodities apart from historical conditions. And there is much to be said for following the advice of Gustav Schmoller (1904), and taking a course in economic treatises the very opposite to what has long been traditional; 'to return,' that is to say, 'to the conception of capital which is rooted in business life, which cannot be got rid of by any theoretical argumentation, and which the theoretical writers who have put forward other conceptions have always occasionally recurred to.'

Before passing away from the definition of capital, it may be noticed how, even within the limits of the traditional theoretical view which identified capital with means of production, that particular class of means of production has been, at each period, put in the foreground of exposition which was actually engaging most attention in real life. From Ricardo down to J. S. Mill, circulating capital was dwelt upon almost to the exclusion of fixed; Ricardo, indeed, in the opening words of his treatise, actually spoke of 'the united application of labour, machinery, and capital,' as if he did not, for the moment, reckon machinery in capital at all. Capital came to be described as 'the funds for the maintenance of labour,' and almost identified with wealth employed in the payment of wages. This, as Cannan has pointed out, was largely the result of the contemporary concentration of attention on the corn problem, and of the fact that the capital of a corn-growing farmer was, in fact, expended chiefly in wages. On the other hand, some very recent writers, following the lead of the Austrian economist Böhm-Bawerk, propose to limit capital in their sense ('social capital') to the buildings, machinery (including money), and materials, including partially finished goods, which have to be produced on the way to the final products which the ultimate consumers eat and wear and live in; they exclude altogether forms of wealth which themselves serve as the maintenance of productive labourers, such as finished articles of food, or clothing, or furniture, even if they still form part of the stock of a manufacturer. 'Capital is nothing but the Complex of Intermediate

Products which appear on the several stages of the roundabout journey' towards the ultimate consumable goods. This conception is evidently the result of the fact that production for ultimate consumption is now more and more, with the growing employment of various forms of 'power,' an elaborate technical process; and that a vast quantity of 'goods' are made not, so to speak, for their own sake, but as means towards a more distant goal. But the limitation of 'capital' to these intermediate products would be a new cause of misunderstanding between economists and business men.

2. **Functions of Capital.**—An adequate discussion of *the functions*—or, in more general terms, of *the results of the existence—of capital* would involve a consideration of wellnigh every part of the wide field of economics. It will be necessary, therefore, to limit ourselves to a few observations on the most important questions at issue.

The treatment of the problem of the workings of capital which is to be found in modern economic literature (including therein, of course, the literature of socialist theory) concerns itself almost entirely with the capital invested in manufacturing and agricultural operations—that is, with capital used for 'production' in the usual sense of that word. The farmers' investment of capital was very much in the mind of writers in the early part of the nineteenth century; but for the last sixty or seventy years it has been the typical modern factory or 'works' that has been most distinctly present to their thoughts. Capital employed in the distribution of commodities—the capital of the merchant or shopkeeper—has been usually left out of account altogether. Though Senior (1835) expressly defined capital as including all articles of wealth, themselves the result of human exertion (that is, excluding land in itself), which are 'employed in the production *or distribution* of wealth,' and J. S. Mill explained that the agency of 'the distributing class' is 'supplementary' to that of 'the producing class,' no serious attempt was made to bring distributers' capital into economic discussion. And not only so, but such very considerable investments of capital, in the current sense of the term, as take the direction either of house property on one side or of Government war debts on another, were entirely disregarded.

The views taken of the workings of manufacturing capital by economists have usually been cheerful, dwelling on its benefits to society; while the views of socialists have generally been gloomy, and have dwelt upon the evils it has occasioned. The reason is that the former have had the *production* of wealth in their mind, and have assumed that the increase of wealth in itself, or an increase that outstripped the growth of population, was necessarily a good thing. The latter have been thinking mainly of the *distribution* of wealth (in the current economic sense of 'distribution') among the several classes concerned in its production, and have laid all their emphasis upon the power which is conferred upon individual owners by the private ownership of capital. A few words, then, as to each of these points of view.

It is very obvious that capital invested in the production of commodities does, as a fact, 'facilitate' labour. Under modern conditions it may fairly be called a 'requisite' of the overwhelmingly greater part of productive activity; and this is the excuse for the practice which has generally prevailed among economists, at any rate since J. S. Mill (1848), of putting capital by the side of land and labour, and so creating a triad of 'agents' or 'instruments' of production. As they were usually careful to explain that labour and land (or 'natural agents') were primary, and capital only secondary, there is no real reason to find fault with their classification. But just *how* does capital contribute to production? The French economists of the eighteenth century, known as Physiocrats, started with the fact that, in agriculture, it is necessary to provide for the subsistence of those engaged until the harvest can be reaped. The necessary store or fund possessed beforehand they called 'advances,' and they went on, with a little pardonable exaggeration, to point out (as in Turgot's *Reflections*) that 'all the various kinds of labours, whether in the cultivation of the land, in industry, or in commerce, require advances.' They recognized that these advances might possibly be provided by the labourer himself; but since, even by that time, almost all labourers in manufacture and very many in agriculture were in fact maintained by wages, they usually spoke as if the advances were normally made by an employer, in control of capital, to capitalless employees. And Adam Smith, following in their steps, tells us that 'in all arts and manufactures the greater part of the workmen stand in need of a master to advance them the materials of their work, and their wages and maintenance till it be completed.' Though fixed capital may perhaps be squeezed within this conception, the main stress, as we have seen, by the earlier generations of English economists was laid upon capital as furnishing the subsistence fund of the workpeople. Since capital thus enabled production to take place to a far larger extent than would otherwise have been possible, it might fairly be said to 'contribute' to production. Whether, for this reason, capital can properly be called 'productive' is only a matter of terminology.

The only important further step which the older English economists took, following in the wake of Adam Smith, was to connect the thought of 'advances' with the thought of division of labour. It is only in consequence, he argued, of a previous accumulation of capital that division of labour is possible, and division of labour brings with it a greater production; and Adam Smith went so far as to say that the greater the capital the greater would naturally be the division of labour, with all its attendant benefits—forgetting for the moment that limits are set to division of labour by the extent of the market.

With the increased magnitude and greater relative importance of plant and machinery in recent decades, the tendency has been, as we have seen, with some economists to fix an almost exclusive attention upon that particular form of capital. The nature of the contribution to production rendered by capital, thus conceived, has been shown by Böhm-Bawerk to consist in what he calls 'the roundabout process' (*Umweg*) which it makes possible. To spin yarn on a wheel and weave it on a hand-loom is a more roundabout way of proceeding than to use at once a sheep's fleece; to build spinning sheds and weaving factories, to produce iron and then steel from it by modern methods, to construct therefrom textile machinery, and at the end of it all to produce woollen cloth by millions of yards is a far more roundabout way still, but one which enables us to use forces of nature of a kind and to an extent which otherwise would have been impossible. Böhm-Bawerk has given the impression that he regards an elaboration of the process as necessarily always involving a lengthening of the time occupied, and as if the tendency of technical progress was always towards further elaboration and the requirement of longer time, which is hardly the case. His exposition has certainly contributed to our realizing better what 'production' means in the modern world, even if his view was, after all, implied in what economists from Jevons back to Turgot have again and again said about the importance of *time* in questions of production. And if capital, in the sense of machinery and plant, not only enables commodities to be obtained in larger quantities with the same amount of labour, but also some commodities—for example, aeroplanes—to be obtained which unaided labour could never produce, it is only a question of words whether it be called 'productive.'

The view of capital taken by Marx (1867) and the school of Socialists which has accepted his 'critical analysis of capitalist production' dwells exclusively on the 'exploitation' of the workers which, in his opinion, capital renders not only possible but inevitable. The use of the term 'capital,' it is to be noted, is confined by Marx to means of production which are entirely outside the possession or control of the labouring population. The employing class, he argues, having a monopoly of capital, is in a position to compel labour to work for it in return for subsistence. Over the cost of production of goods (composed mainly of the subsistence of the workpeople, though increased somewhat by the necessity of providing for the wear and tear of machinery), the value of the product (due itself exclusively, in his view, to the labour employed on it) leaves a surplus (plus value, *Mehrwerth*), which the capitalist is in a position to appropriate. This surplus, in its turn, swells the fund of capital for the further exploitation of labour. (See LABOUR AND POLITICS.) It is the less necessary to enter upon a discussion of this view here because the doctrine of value which Marxism, in its rigid and orthodox form, necessarily presupposes, is now abandoned by the younger generation of socialists. It is sufficient to remark that the Marxian doctrine of surplus value, though very one-sided and grossly exaggerated, nevertheless contains a considerable element of truth. This truth is that, as a rule—that is, in the absence of any very keen competition for labour on the part of capital, and when there exists a tacit or avowed understanding between the owners of capital not to raise wages—'labour' in the face of capital is relatively weak. The improvements effected in wages by the pressure of trade unions, and the large losses of capital that are continually taking place, show, indeed, that the advantage is by no means always entirely on the side of the capitalist. Moreover, in the actual returns to capitalist enterprise, a very large part is the reward of business ability, and another large part a reward for the running of risk. If we grant that, even allowing for these two considerations, there is still a large return obtained for capital without any personal service on the part of its owners, the objection on principle to such a return is really an objection to the possession of investible wealth, and to the present right of its owner to ask a price for its use—an objection, that is, at bottom, to private property. It does not, however, follow that the return to capital as such is not larger than is necessary to bring about a continuous and sufficient supply. At present, when capital finds its return seriously diminished by the combination of labour or other causes, it is able to a large extent to withdraw into other forms or places of investment. This possibility may be expected to be reduced by the completer and more world-wide organization of labour.

Comparing, then, the economists' eulogy of capital in its relation to the production of wealth, and the socialists' criticism of it in its relation to distribution, it will be seen that the problem is one of a balance of considerations. If it be remembered that during the last sixty years, at any rate in Great Britain—a capitalistic epoch *par excellence*—the working classes are found to have gained *on the whole* very considerably in material well-being, whatever the tests that are applied, it may be concluded that the services of capital have exceeded its disservices. The value of the socialist criticism lies in its reminding us that this progress has been attended with grave drawbacks.

3. **Origin of Capital.**—This will be a convenient point to say something on the much-disputed subject of *the origin of capital.* It is obvious, after the preceding

discussion, that nothing less is here involved than the origin and growth of wealth over and above actual consumption, and of the employment of such surplus wealth for the purpose of gain. An adequate treatment of the subject would bring almost the whole of economic history within its view. It would include, first, the question of the origin of the surplus over consumption; and this is clearly the result, partly, of the quantity of production (itself dependent on multifarious geographical, psychological, and technical causes), and partly of the habits and standards of consumption. It would include, secondly, the question of the means and opportunities of investment, which would introduce the history of law, the development of enterprise, and the whole of technological invention and discovery. And these two questions are indissolubly connected. Before there is a surplus it cannot be invested; but the amount of investible surplus is largely determined both by the expectation and by the results of successful investment. Finally, there is the third question of the distribution of the ownership of capital among its several proprietors, or, to use the older phraseology, of the size of individual 'capitals.' And a complete answer to this question would cover a very large part of the history of human society; for it would have to include an examination of all the facts, both of environment and of personal quality, which gave certain men their several proportions of advantage over other men in the acquisition of investible wealth.

We must here content ourselves with a few comments on one or two ideas that have played a large, and in truth a disproportionate part, in economic discussion. If from 'capital' we exclude land—as by implication we have done in the paragraphs immediately preceding—and limit the term to the products of past labour, then it is a mere restatement in other words of a part of our definition to say that capital is the result of 'accumulation.' Unless products escaped consumption in the present, they could not be used for further production or further pursuit of gain. But it has proved curiously difficult to state this obvious external fact withou implying some moral (and usually by implication som commendable) quality in the accumulator. It has bee usual from the time of Adam Smith to speak of the process of accumulation as 'saving;' a most unfortunate term, for while it ought, in this connection, only to mean non-consumption or non-destruction, it inevitably carries with it the impression of a certain self-denial or effort, such as does not by any manner of means always necessarily exist. Adam Smith doubtless intended commendation when he laid it down that 'capitals are increased by parsimony and diminished by prodigality and misconduct;' for 'parsimony' is here evidently used in a favourable sense. Senior (1835) introduced the term 'abstinence;' and though he recognized that 'pure abstinence' was 'a mere negation,' he nevertheless associated the term with 'self-denial.' To J. S. Mill (1848), Senior's explanation of profit as 'the remuneration of abstinence' was 'a well-chosen expression.' It is 'what the capitalist gains by forbearing to consume his capital for his own uses. . . . For this forbearance he requires a recompense.' MacVane (1887) has suggested the term 'waiting' instead of 'abstinence,' and this has been adopted by Marshall. But even 'waiting' is hardly colourless enough for the purpose; and 'the reward of waiting' is more objectionable still. For the fact is that an increasingly large amount of accumulation of capital takes place because much revenue flows to its owners in sums too large to be possibly 'consumed.' It is misleading to speak of a 'postponement of enjoyment' in circumstances where immediate enjoyment is impossible.

All such language, while it is doubtless capable of interpretation to suit the facts, does, in ordinary speech, apply to the whole of the accumulation of capital what is true only of a part. And there is some danger lest, in reaction, we should lose out of sight the large amount of capital which actually is the outcome of the thrift and foresight and self-denial of the less wealthy members of society; in relation to whom the interest they secure can quite fairly, in the language of everyday life, be called 'the reward of abstinence.' In some countries this type of accumulation of capital is widely diffused; and it is now encouraged by the establishment of branch banks, serving as places of investment. Possibly in France it still accounts for the larger part of the available capital. For Germany, Schmoller has recently (1904) calculated that out of annual accumulations of capital amounting to two and a half thousands of millions of marks, as much as one thousand millions are still to be attributed to 'real savers' of the less well-to-do classes.

The historical origins of accumulated capital is a subject which has hitherto been but inadequately investigated. The impression which is likely to be produced by a general survey of English economic development since the Middle Ages might be stated in some such terms as these. The lords of land in the Middle Ages and down to the eighteenth century derived considerable revenues from rents, but, on the whole, lived up to their incomes, and achieved no large accumulations. Capital in large sums was chiefly the outcome, in the fifteenth and subsequent centuries, first, of foreign trade; and, secondly, of the manufacturing enterprise, closely associated with it, of the 'clothier.' During the eighteenth century capital so won in trade was brought into agriculture by the settlement of city men in the country or by marriage. As a result both of the investment of capital in the improvement of land and of the growth of population leading to a rise of prices, rents went up, and it became possible to derive fresh capitals from landownership. And, finally, in the nineteenth century, the sources of accumulation were added to by the growth of large scale production in manufacture under the factory system, as well as by the rise of the stock exchange, by public contracts, by the development of transportation services, by the enlargement of 'the professions,' by the increase of urban land values, and many other causes. And much the same can probably be said of the other countries of Western Europe. The German economist Sombart (followed in England by J. A. Hobson) has, indeed, maintained of late (1902) that the real historical source of business capital is to be found in the rent of land, and primarily in the ground rents of urban land, owned by the mediæval burgher aristocracy. This was, quite possibly, one source of commercial capital; and, according to Bücher, who has specially investigated the mediæval social history of Frankfurt, it there played a considerable part. But it is noticeable that Sombart's proposition finds apparently little confirmation from any of the scholars who have recently been examining into the situation in Augsburg, Venice, and other mediæval commercial centres.

4. **Amount of Capital in Use.**—In turning now to the various attempts which have been made to estimate the amount of capital employed in a country at a particular period, three considerations have to be borne in mind. The first is that many of the estimates, including among them some of the best known, do not sufficiently distinguish between the amount of *capital* and the amount of *property* or *wealth* in general. For instance, Giffen, in his celebrated writings on the 'accumulation' or 'growth' of 'capital,' uses 'capital' and 'property' as interchangeable terms. The second is that the estimate must necessarily be in terms of *money*. In a period in which prices have gone up or gone down, owing to currency causes, the valuation of

wealth, or of that part of it called capital, would increase or decrease, even if no change had taken place in the things themselves and in the use that could be made of them. And the third is that the total is, in any case, a sum of pecuniary *values*, and depends upon all sorts of forces of demand and supply. An increase in the value of houses, or of land in or near towns, for instance, will result from the aggregation of population; a decrease in the value of agricultural land will result from a fall in the value of its products, due, for instance, to foreign imports, even when the products continue unchanged in amount and quality. And the same thing is true of other forms of wealth. A fall in the price of cotton cloth will affect the pecuniary profit of a cotton mill; and if the capital invested is estimated on the basis of the profit, the capital will seem to have fallen, even though the plant and the output remain physically unaltered. Schmoller has even ventured to conjecture that the increase of wealth per head, instead of being twelvefold in England between 1600 and 1885, as the figures might seem to show, was not much more than fivefold or sixfold, if measured by its actual usefulness.

In estimating the amount of wealth (or of that portion of it called capital) owned by the inhabitants of a particular country, two lines of procedure are possible, which, in default of better terms, may be called the *objective* and the *personal*. The objective starts with the various embodiments of wealth (or of capital alone), endeavours to ascertain their pecuniary value, and adds up the various sums to form a total. The personal starts with the individual (or corporate) owner of wealth (or of capital alone), seeks in some way to ascertain its amount, usually on the basis of taxes paid, and then sums up. The first, therefore, is a *direct*, and the latter an *indirect*, plan.

First, then, as to the objective method. It is to this method that American statisticians have been compelled to have recourse, owing to the absence of income or inheritance taxes. The decennial federal census and the statistical reports of certain of the states contain elaborate statements as to the total amount of capital invested in manufactures, derived from information concerning the amount invested in the several concerns. Those in the earlier federal censuses are now recognized as being, in the strong language of General Walker, who was himself in charge of the ninth and tenth censuses (1870, 1880), 'entirely untrustworthy and delusive.' 'The inquiry is one,' he goes on to say, 'of which it is not too much to say that it ought never to be embraced in the schedules of the census. . . . It is the one question which manufacturers resent as needlessly obtrusive, while at the same time it is perhaps the one question in respect to their business which manufacturers, certainly the majority of them, could not answer to their own satisfaction, even if disposed. No man in business knows what he is worth, far less can say what portion of his estate is to be treated as capital.'

With the growth of joint-stock companies one might, indeed, expect the difficulty to diminish; for the joint-stock organization introduces a sharp distinction between the capital of a business concern and the private fortunes of its owners. But now fresh difficulties make their appearance in the divergence between the nominal amount of the capital and the actual amount of the investment. In America, at any rate, as Mayo-Smith remarks, 'the capital stock bears no necessary relation either to the amount of money originally invested or to the present value of the plant or to the total amount of money necessary to carry on the business. In many cases the amount is too small, as when profits have been turned into capital without increasing the amount of stock. In other cases the amount is too large, as where the stock has been watered, or new stock issued to represent the value of a franchise (concession) or the earning capacity of a business. . . . Finally, in the case of many enterprises, especially (American) railroads, the bonded indebtedness represents in whole or in part the cost of the enterprise, while the stock is more or less fictitious, and represents only the expectation of profits.' Accordingly, Mr. Carroll D. Wright, in preparing the Massachusetts census of 1885, decided to understand by capital the *assets* of the several concerns, as valued by their owners, *plus* the '*credit capital*' of which they had obtained the use, and drew up his inquiries accordingly. This resulted in a return of 500 million dollars as the total amount of capital then invested in the state, classified under the several heads in the following percentages of the whole :—

	Per cent.
Land	6·87
Buildings and Fixtures	16·87
Machinery	20·17
Implements and Tools	2·86
Cash	34·65
Credit Capital, supplied by partners and stockholders	3·89
Credit Capital (bills payable, accounts on long time)	14·69

The inclusion of borrowed money—the sixth item in the above list—is defended on the ground that only in this way can we discover *the total amount of capital set in motion.* But whether it is desirable to ascertain this or not, it probably cannot be satisfactorily determined by statistics, for manufacturers will usually be loath to give the information. In Massachusetts very few returns paid any attention to this particular head of inquiry; and it is almost impossible to prevent the borrowed money to some extent reappearing again among the assets in the form of plant, material, and cash, and thus being returned twice. Benefiting by this experience, the federal census of 1890 omitted credit capital, and asked only for the *assets*. But unless, as was not the case, manufacturers were required to deduct their debts, this also might lead to the counting of some items twice over in the national total; for one concern might count among its capital in the form of materials goods for which it had not yet paid, and for which the bill would be reckoned in the capital of the seller. Accordingly, in 1895, the Massachusetts census determined to limit 'capital' to the actual *instruments of production*, including the property in land, buildings, machinery, patent rights, etc., cash in hand, and the cost value of materials and goods in process of manufacture, but not bills receivable and current accounts, and also not finished goods in stock. This last exclusion is obviously the result of the Austrian (Böhm-Bawerk) conception of capital as limited to intermediate products, and introduces the further complication of a violent departure from current business usage, which certainly includes in capital the value of finished goods in the hands of the manufacturer or merchant.

The federal census of 1900, however, retained the classification of that of 1890, so that the figures for these years are fairly comparable. They show an increase in capital employed in manufactures from 6,525 millions of dollars to 9,818. This sum, however, large as it is, must represent only a comparatively small part of the total capital employed in the United States; for it includes neither agriculture, nor transportation, nor mining.

The absolute figures of manufacturing capital given in the census returns are certainly of little value. It should be borne in mind that even when statistics are based, in whole or in part, on concrete material things, such as plant, there are grave difficulties in the way of securing a satisfactory valuation. Different methods of valuation, reaching very different results, may each be honestly defended. As to plant itself, the census inquiry directed the representatives of the various establishments to estimate the value 'at what the works would cost' in the census year, 'if then to be erected, with such allowance for depreciation as may be suitable in the individual case.' But it is quite impossible to ensure the observance of such a rule, even when the informants are ready to take trouble in the matter, which is by no means always the case. And a comparison of the several industries shows such divergent results that it would be clearly unsafe to rely upon them with any confidence. But if we can take the totals as very roughly indicating the relative magnitude of the several elements involved, we arrive at some interesting general conclusions. And first, as to the relative proportions of the total valuation due on the one hand to *plant* and on the other to *live capital* or *live assets*—the terms which, in the language of the census, replace the 'fixed' and 'circulating' traditional among economists. To be more particular, 'live capital' is here made to include cash in hand, materials on hand, finished goods in stock, and unsettled accounts. Both in 1890 and 1900 the total manufacturing capital was found to be divided between plant and live capital roughly in two equal portions; and of the fixed capital or plant, again, about half was returned as invested in machinery. And then as to the relations between capital and labour. If it is thought worth while to compare the annual wage bill with the total capital invested, it will be found that over the Union as a whole in 1890 and 1900, and in Massachusetts in particular in 1894 and 1897, the former amounted to between a quarter and a third of the latter. But the conclusion is really valueless; for the wages bill represents the wages paid during a period arbitrarily chosen, while the total capital is measured at one particular time. Of more meaning, so far as they go, are the figures that show the excess in the gross selling value of the year's products over cost of production (including the interest on borrowed money). If this excess could be regarded as so much clear profit, the figures would indicate a profit on the whole of more than 19 per cent. on capital, alike in 1890 and in 1900; amounting to a sum which increased from a little under a half (in 1890) to rather more than two-thirds (in 1900) of the amount paid in wages and salaries. It would seem that with the rapid increase in capital in the decade there went an increase in the proportion of the nation's product that fell to capital as a whole, though the percentage on capital remained the same or even somewhat diminished. But, of course, the excess of product over cost cannot be regarded as so much clear profit, if, as would appear to have been the case, cost included no allowance for depreciation or renewal of plant, and value of product contained no allowance for bad debts.

A good deal of fresh light has lately been cast upon the problem of capital in the course of investigations which have had for their purpose to ascertain not the total amount of a nation's capital but the statistical relation between the capital invested in certain particular undertakings, or groups of undertakings, and the gain accruing to their owners. In Hungary and Germany these began with Körösy's inquiry in 1901 into the financial results of the joint-stock companies of Buda-Pest, and they have resulted in the initiation by the German Imperial Government of a series of annual statistical reports, beginning in 1909, on 'the business results of German joint-stock companies.' In the United States the investigations have been incident to the inquiries recently set on foot by the Commissioner of Corporations into the affairs of the great trusts. One curious contrast emerges from the two sets of investigations. In Hungary and Germany, from the beginning of the joint-stock movement down to quite recent years, the nominal *paid-up* capital was considerably less than the amount really invested (*paid in*) by the shareholders, owing to the very general practice of issuing shares at a premium. Both in Hungarian banking and over the very considerable field of German engineering one-fifth must apparently be added to the nominal paid-up share capital to reach the sum actually contributed. On the other hand, it appears that in the case of the United States Steel Corporation 'the fair market value of its tangible property' when it was formed, in 1901, was only about seven-tenths of the total amount of nominal stock (equally divided between common and preferred), and only about one-half of what is known in business as the total 'capitalization' (that is, nominal capital stock *plus* bonds or debentures and other obligations). It is interesting to notice that of the three methods employed to arrive at this 'fair market value' (otherwise described as 'the actual investment')—namely (1), an historical study of the formation of the constituent concerns; (2) the summation of the market values of their securities; and (3) a detailed 'estimate of the value of the physical properties of the corporation by departments of the business'—the first and third reached substantially the same results, and the second diverged from them to the extent of about 17 per cent.

To return, now, to the more ambitious effort to reach figures for a *national total*. The *personal* or *indirect* method takes two forms. One is that first attempted by Newmarch, and afterwards repeatedly and more adequately applied by Sir Robert Giffen. It consists in capitalizing the income assessments of the income-tax authorities, and thus arriving at a figure representing the value of the property whence the income is derived. So far, the conception of capital thus implied is identical with that stated by Adam Smith in dealing with *individual* capitals, and identical also with the conception of capital entertained by the business world—except in this important respect, that it includes agricultural land, which, as we have before noticed, is still not commonly present to the mind of the business man or, indeed, to the mind of the man in the street, when he is talking of capital. To this, moreover, Giffen added figures for 'movable property not yielding income' and 'government and local property.' It is easy to omit these two items, and apply the name 'capital' only to capitalized income.

In such capitalizing calculations there are two sources of danger. The minor one is in the multiplicand, the amount of the assessments themselves. It is not very difficult to make allowance both for income improperly included and for income that escapes assessment. What is more difficult is to determine, in the case of incomes derived from certain miscellaneous 'trades and professions,' how much is to be credited to a supposed capital and how much to personal exertion. Sir Robert Giffen, dealing with 1865, 1875, and 1885, assumed one-fifth as the proportion due to capital; Mr. Money, dealing with 1902, assumed one-half. Supposing, however, the incomes from capital to be sufficiently ascertained, the graver question arises as to the appropriate multiplier. Newmarch multiplied the total income by 20; Giffen used a special multiplier for each of the main heads. Legitimate difference of opinion may arise as to the appropriate figure; and a figure appropriate for one year may need to be modified a few years later if circumstances have changed—if, for instance, the years' purchase of land or the rate of interest has meantime altered. Thus, for agricultural land, Giffen, for 1865 and 1875, assumed 30 years' purchase; for 1885, 26 years'; Money, for 1902, 18 years'. Farmers' profits (which in Giffen's time were reckoned for income-tax purposes at one-half the annual value of the farm, and now at one-third) were multiplied by Giffen, for 1865 and 1875, by 10; for 1885 by 8; by the *Economist* and Mr. Hirst, for 1895, 1905, and 1909, by 16. The income of railways was multiplied by Giffen, for 1865 and 1875, by 25; for 1885 by 28; by the *Economist* and Mr. Hirst, for the more recent years, again by 25. Profits from miscellaneous trades and professions, an important item, were multiplied by Giffen, for the earlier years, by 15; by the *Economist*, for later years, by 12; by Money (after more than doubling the supposed income, as mentioned above) by 10. The profits of mines, quarries, and iron works Giffen multiplied by 4 only, Money by 5, the *Economist* by 8.

It will be apparent that conclusions so obtained can be regarded only as very roughly approximate. The following are the estimates of the total amount of wealth in the United Kingdom reached by the several writers whose names are set opposite. All exclude the National Debt except Mr. Money, who includes it, but deducts it also from the value of public (imperial and local) property.

		Million £.
1865	Giffen	6,113
1875	„	8,548
1885	„	10,037
1895	*Economist*	10,663
1902	Money	11,413
1905	Hirst	13,036
1909	„	13,986

The difference between the rates of increase—40 per cent. between 1865 and 1875, and 17·4 per cent. between 1875 and 1885—Giffen attributed largely to the fall in prices in the latter period. Allowing for a fall of 15 per cent., the increase between 1875 and 1885 would work out at about the same rate—namely, 40 per cent.—as in the previous period. A like allowance for a rise in prices between 1895 and 1905 of 14 per cent. would reduce the increase in wealth between those dates from 32 per cent. to 14 per cent.

Before criticizing these figures further, it may be convenient here to insert the estimates of wealth at earlier periods which Giffen derives from a number of earlier writers, and regards as tolerably trustworthy.

	Million £.
1600 [E. and W.]	100
1665 ,,	250
1688 ,,	320
1740 ,,	480
1762 ,,	500
1800 [G.B.]	1,740
1812 [U.K.]	2,736
1833 [U.K.]	3,690

These, like the later figures already given, are estimates of total national wealth. They include a figure for the value of agricultural land, rising from 144 millions in 1665 to over 2,000 millions in 1875, and falling again early in the twentieth century to 1,300 millions according to one authority and to as small a sum as 936 millions according to another. They include a figure for government and local property, rising from 300 millions in 1865 to 630 millions in 1909 ; and for 'movable property not yielding income,' defined further as 'furniture, works of art, etc.,' put down for the last quarter of a century by Giffen and Mr. Hirst at the highly conjectural figure of 1,000 millions. These last two items would have to be deducted to arrive at 'capital' in any business sense of the term. On the other hand, to reach the total sum of individual capitals, it would be necessary to include the National Debt.

The other form of the indirect method starts with the amount of wealth passing at death from one owner to another, as indicated by death-duty figures. This plan was used as long ago as 1851 by Porter in England ;

by its means De Foville arrived at the conclusion that the total wealth of France in 1886 was some 8,000 millions of pounds sterling, and Pantaleoni that the wealth of Italy in 1884 was as little as 1,920 millions sterling. The introduction of the estate duty in Great Britain in 1894 has simplified the statistical material, and on the basis of this material the method has been recently applied again to this country. The chief difficulty once more is with the multiplier. What proportion of the wealth of a country passes by death in the course of a year ? De Foville gave reasons for believing that 36 was the proper multiplier, and had been followed by Pantaleoni; Porter and Giffen had used one much larger. But Mr. Bernard Mallet's recent conclusion that 24 is the appropriate number seems to be generally accepted by English statisticians. On this assumption the total wealth of England and Wales (only) for 1905–6 works out at between 5,500 millions and 6,000 millions of pounds in total money value. Allowing for the omission of Scotland and Ireland, and for the items of public property, this figure differs from those reached on Giffen's method by some 2,000 millions. It is hardly likely that the evasion of the duty by gifts *inter vivos* accounts for the whole of the difference; and if not, it would follow that the estimates of Giffen and his followers on the other method are to some extent excessive.

5. **Bibliography.**—For the definitions of capital by the economists, reference must, of course, be ultimately made to their own writings, and, among English-speaking writers, especially to those of Adam Smith, Ricardo, Senior, J. S. Mill, Jevons, Marshall, and Clark; for the socialists, to those of Rodbertus, Lassalle, and Marx. The grouping of definitions according to the range of wealth they were intended to cover began with Knies, *Das Geld* (1873), and was carried further by Wagner in his *Grundlegung* (1879). This method of approach to

the subject was further elaborated by Böhm-Bawerk in the work published in 1888, and translated, under the title, *The Positive Theory of Capital,* in 1891. For the earlier English writers in particular the reader should consult Cannan's *Production and Distribution* (1893). The whole discussion has been reviewed by Spiethoff in the section on Capital contributed to *Die Entwicklung der deutschen Volkswirthschaftslehre* (1908); and a brief discussion of definitions of capital will be found in Appendix E of Marshall's *Principles of Economics,* 5th ed. (1907). A most illuminating survey of the literature, especially on the statistical side, is presented by Schmoller's *Grundriss der Allgemeinen Volkswirthschaftslehre* (1904), Part II., Book iii., chap. v. (to be read also in a French translation, *Principes*). For a forcible statement of the importance of 'saving' in France, in the ordinary sense of the word, reference may be made to Hanotaux's essay on 'La Ville Moyenne' in his *L'Energie Française.* For a discussion of the methods of the American census, see *The Federal Census: Critical Essays,* by members of the American Economic Association (1899); Mayo-Smith's *Statistics and Economics* (1899); and Pierre Leroy-Beaulieu's *Les Etats Unis* (1904). The recent Hungarian and German work on the earnings of companies is reviewed by the present writer in an article on 'The Statistical Measurement of Profit,' in the *Economic Journal,* Dec. 1910; and the analysis of 'the real investment' represented by the greatest American trust in the *Report of the Commissioner of Corporations on the Steel Industry* (July 1911), Part I. Giffen's work, which is indispensable to the serious student of the subject, consists of the essay on 'Recent Accumulations of Capital,' in *Essays in Finance* (1st series, 1886); and of the volume on *The Growth of Capital* (1889), now somewhat difficult to procure. Mr. Money's estimate for 1902, following Giffen's method with important divergencies in detail, appears in his *Poverty and Riches* (1905). A valuation for 1909 appeared in the *Economist* in 1911; and this, together with two valuations for 1895 and 1905, is given in G. R. Porter's *The Progress of the Nations*, new edition, ed. by F. W. Hirst, 1912. The utilization in France of statistics of inheritance is discussed, with a summary statement of valuations in other countries, in M. de Foville's article on 'The Wealth of France and of Other Countries,' translated in the *Journal of the Statistical Society*, Dec. 1893; and Mr. Bernard Mallet's argument on the same subject appears in the same journal for March 1908. A very complete examination of the subject in relation to France will be found in Lavergne and Henry's *La Richesse de la France* (1908).

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Casual Employment. See LABOUR EXCHANGES.

Changes, Industrial, Measurement of. See MEASUREMENT OF INDUSTRIAL CHANGES.

Charitable Institutions. See FACTORY LAW.

Children, Employment of. See FACTORY LAW; WOMEN AND CHILDREN AND THE LABOUR MARKET.

Children, Feeding of. See PHYSICAL CONDITIONS, ETC.

Children, Medical Inspection of. See PHYSICAL CONDITIONS, ETC.

Children, Physical Condition of. See PHYSICAL CONDITIONS, ETC.

Clinics. See PHYSICAL CONDITIONS, ETC.

Colonies, Agricultural. See EMIGRATION.

Combination Acts. See TRADE UNIONS.

COMBINATIONS, INDUSTRIAL.

1. *Origin.*
2. *Monopolies.*
3. *Corners.*
4. *Conditions of Combination.*
5. *Price Associations.*
6. *Pooling Associations.*
7. *Sales Associations, Kartells, or Syndicates.*
8. *Trusts.*
9. *Amalgamation.*
10. *United Kingdom.*
11. *Germany.*
12. *United States.*
13. *International Combinations.*
14. *Bibliography.*

1. Origin.—The progress of science has given to the modern industrial world two leading characteristics—large-scale production and improved means of communication—both of which have, as their first results, intensified competition. The introduction of machinery and the factory system killed out the independent handworker, and the large factory in turn tends to eliminate the small factory in all trades where the possession of a large capital enables a firm to make economies in purchases and in sales, to incorporate subordinate branches of industry and absorb middlemen's profits, to utilize by-products, to provide a better business organization, and to hire the best brains in the industry. The result of this destructive competition is that in all the great trades of any industrial country a considerable portion of the production is in the hands of a comparatively small number of large firms. Competition among these firms continues partly by tradition, partly because the limit to the economic expansion of the individual firm has not yet been reached. This competition is stimulated by improvement in the means of communication—railways, steamships, telegraphs, telephones—

which widens the market and at the same time increases the difficulty of foreseeing what will be the course of trade, and introduces a large number of new competitors from different countries. Formerly, each local market, with a few manufacturers working on customary principles, was a stagnant pool. To-day, each large trade works for a world market, every corner of which is liable to be swept by an industrial storm, starting perhaps from some distant country.

Every manufacturer strives to increase his business to the utmost extent, so that he may thereby reduce his costs of production, and, as each has only an imperfect knowledge of the market, the result is that from time to time there is an over-production of some class of goods, with a fall of prices ending in a commercial crisis. At certain stages in the struggle the weaker competitors are ruined, and the stronger, though suffering temporary loss, ultimately recoup themselves by absorbing the business of their less successful rivals. Later on, as the competitors become reduced in numbers, the loss is shared among competitors, all of whom are strong, and the chance of recoupment is lessened. A revulsion against competition now sets in, and the competitors combine to control the market, to regulate prices and production, and to make their profits greater and more stable. Free competition was, theoretically at least, the note of the nineteenth century; the combination or concentration movement is the chief industrial characteristic of the twentieth.

2. **Monopolies.**—Industrial combination must not be confused with monopoly. The former aims at control of an industry, and if this is secured its engineers may be satisfied to leave part of the market to independent firms, since by such tactics public hostility may be lessened. Monopoly, on the other hand, is an exclusive power to trade, and may be either natural or artificial. Natural monopolies are those where Nature herself

prohibits competition, as in the case of a water company or the Japanese Government monopoly of camphor in Formosa, the only source of the drug. Artificial monopolies are those dependent on some royal or parliamentary grant, such as the trade monopolies granted to private persons in Elizabethan and Stuart times, prohibited by the Statute of Monopolies of 1624; and modern fiscal monopolies, such as the State monopolies of tobacco in Austria, France, and Italy. That monopoly is contrary to public policy is an established principle of English law, which has only been relaxed in favour of individuals who wished to undertake a risky trade, or who introduced a new process or manufacture. In the former category come the great trading companies, the Levant Company, the East India Company, and many others, now all abolished; in the latter are those who obtain a restricted monopoly from patent laws.

3. **Corners.**—'Corners' must also be discriminated from combinations; the latter are in object permanent, the former are mere temporary raids on a market. In a corner a person or a group of persons attempts to buy up all the supplies of wheat, for example, for the purpose of selling it at a much enhanced price; where there is a speculative market, all the wheat offered must be bought with the object of forcing the sellers to compound by paying heavy 'differences' if they are not able to deliver the actual wheat at the time fixed in the contract. A corner may be engineered by people who have nothing to do with an industry, and who do not want to handle the actual goods they buy. An industrial combination is managed by persons in a trade for the good, as they see it, of the trade.

4. **Conditions of Combination.**—The general economic cause of combination is, as already stated, the desire to escape from destructive competition. Some subsidiary conditions have in certain cases assisted combination. (1.) Control of raw materials, since thereby the entrance

of new competitors is prevented. Examples are, the German potash industry, the Rhenish-Westphalian coal industry, the American iron industry, the nickel industry, the English Salt Union, etc. (2.) Alliance with railways, so that competitors are refused access to markets except on unfavourable terms. This was one of the chief weapons of the Standard Oil Company of America in its fight for monopoly; it is now illegal. (3.) Protective tariffs. By shutting out foreign competition tariffs strengthen considerably the power of a domestic combination, but they are not necessary to its existence, as the Standard Oil Company, as well as British experience, shows. The usual course is that the high profits possible under a tariff stimulate competition, reduce the industry to the verge of bankruptcy, and bring about combination as a remedy; a good example is found in the case of the American Tin Plate Company, a combination of thirty-nine plants formed in 1899 and now absorbed in the United States Steel Corporation.

Before a combination can be initiated with a reasonable chance of success, the number of individuals must have been already reduced to a manageable number, and a preponderant majority must give their assent; in British practice the consent of firms controlling at least 70 per cent. of the trade is usually considered necessary. Further, entrance to the trade must not be too easy, or the combination may be upset by fresh competitors. The cotton spinning and weaving trade of Lancashire is singularly free from combination, because the spinning branch is organized on the basis of numerous joint-stock companies financed on a system of small loans, largely from the operative classes, and in the weaving branch a newcomer can hire factory, looms, and power, obtain his yarn on credit, and sell his goods for cash.

Manufacturers were first familiarized with the idea of combination through the institution of trade associations to deal with wage questions, conditions of sale, grading of goods or raw material, and like questions. Combinations for the control of production may be either temporary alliances for definite purposes and fixed times, or permanent fusions of firms for all purposes and of indefinite duration. The former may be for clearness called 'associations,' though unfortunately that word appears sometimes in the official title of fusions; the latter will be referred to as 'amalgamations.'

Associations may be purely verbal—'gentlemen's agreements' for a course of action covering a short period, or the dinners to representatives of steel companies by which Judge Gary, the President of the United States Steel Corporation, introduced 'harmony' into the American steel trade up to the summer of 1911. Generally they are contractual, and then are of various forms.

5. **Price Associations.**—Price Associations aim at regulating prices only, either at a meeting of the members or by a representative committee, and the regulation may be done as trade demands or at fixed periodical meetings. Adhesion to the rules may be left either to the honour of the members or may be enforced by penalties. The weakness of this form of combination is that it stimulates output by higher prices, and tends to bring back over-production.

6. **Pooling Associations.**—Pooling Associations are of a higher grade, for their object is to control the output. An old example is the 'limitation of the vend,' or restriction of the sale of coal operated by the Newcastle coalowners in the latter part of the eighteenth century, which in turn repeated the organization of the 'stint' of the Newcastle merchant adventurers of Elizabethan times. The now extinct Nitrate Combination assigned to each member a share of the total production, and by keeping supply below demand left prices to regulate

themselves. Ordinarily, the machinery is more complex. The total output and the share of each member are fixed on the basis of the output of the previous three or five years, with such adjustments as equity may demand. Prices are generally fixed from time to time by a committee, and each member has to pay into a common fund a fixed proportion of his profits. This 'pool' is afterwards shared out according to the allotments of output, so that if a member has exceeded his allotment he loses his profit on the excess.

7. Sales Associations, Kartells, or Syndicates.—Sales Associations, Kartells, or Syndicates, like Pools, are associations for a period of time over which output and prices are regulated by a committee, but they differ in that the association takes over the whole business of sales. In this, the typical German form of combination, a joint-stock company is formed, the shares in which are held by the members of the combination. All the members have to sell their output to the company at a price fixed by the syndicate, and the company sells it at prices determined by the executive according to the state of the market. The surplus of the price paid by customers over the price booked to members is divided periodically among the members in proportion to their allotments of output, due compensation being made to those who produce less than their quota, and similar compensation being paid by those who exceed their quota. Only the technical management of their works is left to the constituent firms.

These different forms of terminable associations may be national in scope or only local, and local associations may compete with each other or may divide the national territory, so as to avoid competition. National associations, again, may agree to regulate international trade—for example, the international rail syndicate of 1883–6, of which Great Britain, Germany, and Belgium were members.

8. **Trusts.**—All forms of terminable association agree in being made for definite periods, and the time of reconstitution is always perilous for the renewal of the agreement owing to the difficulty of reconciling the conflicting claims of members. This trouble is avoided by the fusion of the combining firms into a new company, so that their former identity is lost. The earliest form was the 'trust,' where the owners of a majority of the shares in the combining companies placed their shares in the hands of trustees, who thereafter managed the combined undertakings, and paid to the owners dividends on the trust certificates which they received in lieu of their shares. The prominence which this method obtained, and the obloquy which it met with through its association with the Standard Oil Trust, the Sugar Trust, and the Whisky Trust of the United States, have caused the term 'trust' to be applied to any large association or amalgamation, and the phrase 'the trust movement' is applied to the whole tendency towards combination. The 'trust,' as such, is now illegal. An amalgamation may take place by the formation of a company to purchase the assets of its members, or one firm may buy up the others; or a 'holding company' may be formed to buy up the common stock of a number of combining companies, thus obtaining complete control, while avoiding the necessity of purchasing that part of the capital represented by debentures and preference stock. Amalgamations may either be 'horizontal'—that is, between firms in the same branch of trade, such as the Bleachers' Association, the Bradford Dyers' Association; or they may be 'vertical'—that is, between firms in successive stages of the same industry. The latter form, often called 'integration,' is common in the iron industry, where coal and iron mines, ironworks, steelworks, rolling-mills, and sometimes engineering and shipbuilding works, are often combined together.

9. **Amalgamation.**—The advantages of amalgamation are that it enables a trade to be reorganized; superfluous works can be shut up; the retained works can be specialized and kept running full; and the best minds in the whole trade can be put at the disposal of the combination. Its special risk is that in order to ensure the success of the negotiations too much may be paid for individual plants, so that over-capitalization results, and the business cannot pay. This risk is particularly great if the combination is being engineered by some outside financial agency. Combination of industrialists is to be found in all industrial countries, from the 'prodamet' or trust of the Russian iron industry to the lately dissolved 'coal vend' of Australia. A brief sketch of the movement in the United Kingdom, Germany, and the United States follows; but Belgium, France, and Austria should not be overlooked by the student.

10. **United Kingdom.**—Terminable associations for the regulation of prices and other conditions of production, being in restraint of trade, are repugnant to English law. The law will not give effect to them, 'and, therefore, although the parties may enter into what, but for the element which the law condemns, would be perfect contracts, notwithstanding that, in point of form, the parties have agreed . . . it treats them as if they had not been made at all. But the more accurate use of the word "unlawful"—namely, as *contrary to law*—is not applicable to such contracts' (Lord Halsbury in *The Mogul Steamship Co.* v. *M'Gregor and Others* (1892), A.C. 25). Such agreements consequently are operative only as long as all the parties observe them; if they contain penalties for breach, such penalties cannot be recovered in a court of law, and, on the other hand, a party who has paid a penalty cannot sue for its return. Agreements between manufacturers and retail traders binding the latter to sell only at

prices fixed by the former are also without validity, because such conditions do not 'run with the goods' (*Taddy* v. *Stevious* (1904), 1 Ch. 354).

The result of this legal position is that there has never been in the United Kingdom a closely-knit association movement similar to the kartell movement in Germany. Associations have been formed, have flourished during periods of good trade, and then, when the market took a downward turn, have dissolved owing to the competition of outsiders, or because some member has seen a temporary advantage in breaking away; then, when good times return, they are reconstructed. Yet they have their advantage to manufacturers, for they enable them to steady prices, to exploit a rising market more effectually, and to resist a decline a little longer. If, for example, the prices of Scotch ship-plates, which are governed by an association, are compared with those of Scotch hæmatite pig-iron, which has a 'free' market, the former are seen to be much more regular, and to be only slowly affected by changes in the latter—the prices of the raw material.

Associations are to be found in every branch of British industry except textiles, notably in iron and steel, coal, grain-milling, baking, soap, and in some chemical trades. Generally they take the form of price associations, though 'pools' have existed in rails, gas strip, galvanized sheets, the Irish maize-milling trade, and some other instances, and in February 1912 one was proposed for bedsteads; sales associations exist in the salt and sewing-thread trades. Particularly noteworthy are the steel associations in Scotland and the north of England, which agreed in 1905 to stop mutual competition and the 'dumping' of plates and angles in the neutral market of Belfast. In November 1911 twenty-two steelmakers in Scotland, the Midlands, and the north-east of England issued circulars to their customers announcing that they would allow rebates (payable four months after delivery) of five shillings a ton on plates, angles, shapes, and sections, to all consumers, purchasing either directly or through merchants, who during the three months had bought no material except from the signatories to the circulars. This move was directed primarily against foreign steelmakers, but secondarily against non-associated British firms; and it has not been well received by merchants, who fear that it will tend to make consumers deal directly with makers. Its effect on the trade cannot yet be estimated.

Two forms of association require special mention. In the retail trades there are agreements between retail traders and makers or wholesalers, binding retailers to sell only at fixed prices. The strongest organization is the Proprietary Articles Trade Association, formed in 1896, among chemists and druggists. Here all the owners of proprietary articles bound themselves to boycott any shopkeeper who cut the price of any one article on the protected list. In 1906, 215 firms had their articles in the list, and the movement was eminently successful. It has spread into the grocery, stationery, photographic, saddlery, and games trades.

Secondly, the shipping industry is governed by conferences, mostly international in character, which regulate rates of freights for all the routes where liners are regularly employed. Shippers are bound to the conference firms by a system of rebates of 5 or 10 per cent., which are retained by the shipowner for six months or more, and are forfeited if within that period any goods are shipped by independent vessels. These organizations are very strong, and the case for the shipowners is that only by having a guarantee of regular business can they afford to establish regular and sufficient services. Nevertheless they have aroused great hostility, and have been charged with favouring foreign merchandise against British. Strenuous action has been frequently proposed, and in 1911 the South African Government refused to give mail contracts to companies in the 'South African Shipping Ring.' This dispute was settled in the course of 1912 by the sale of the Union Castle Line to the Royal Mail Steam Packet Co., which abandoned the rebate system and secured the mail contracts. Other firms in the conference are maintaining a reduced rebate.

The development of large-scale amalgamations was checked by the non-success of the first two—the Salt Union and the United Alkali Co.—but the success of J. and P. Coats and the contagion of the American movement gave a great impetus in the closing years of the 'nineties.

Amalgamations in the United Kingdom have taken two forms—combinations large enough to dominate a whole industry, and the creation of large individual firms, which, though not individually dominant, are strong enough to be superior to ordinary combination. The latter form is peculiarly characteristic of the iron and steel industry, where in 1907 there were twenty-five such units, with an aggregate capital of nearly £50,000,000. Some, like the North British Locomotive Co., dominate their section of the industry, but more generally each large unit has expanded by amalgamation with other firms to cover several branches of industry—like Vickers Sons and Maxim (capital exceeding £7,000,000), which ranges from steel to ordnance, battleships, and motor-cars. A further development has been the establishment of a 'community of interests' between independent firms, which exchange holdings of each other's shares. Such are Cammell, Laird, and Co. (ore, iron, steel, rails, shipbuilding) with the Fairfield Shipbuilding Co. (shipbuilding and engineering) and John Brown and Co. (ore to shipbuilding) in 1905–6, to which were added the Workington, Harrington, and Moss Bay Co.'s (all ore) in 1909, making a capital total of about £9,000,000.

In textiles, sewing thread is dominated by J. and P. Coats, Ltd. (capital, £11,000,000), and the English Sewing Cotton Co. (£3,000,000), which are allied; fine cotton spinning, by the Fine Cotton Spinners' Association (£7,250,000); calico printing, by the Calico Printers' Association (£8,250,000) and the United Turkey Red Co. (£1,500,000); bleaching, by the Bleachers' Association (£6,800,000); dyeing, by the Bradford Dyers' Association (£4,800,000), the British Cotton and Wool Dyers' Association (£1,900,000), and some minor combinations. In the chemical trade, the Salt Union, formed in 1888 with a capital of £4,000,000, was unsuccessful owing to the attraction of new competition by its attempt to raise prices. Since 1906 it has been a member of the North-Western Salt Co., a sales association including practically all the British makers. The United Alkali Co. (1890; capital, £8,500,000) was unsuccessful owing to the competition of new processes which carried Brunner, Mond, and Co. to success; the latter, late in 1911, absorbed the soap firms of Gossage and Crosfield, bringing its capital up to over three millions. The Wall-paper Manufacturers, Ltd. (1900; £4,200,000), covers with three associated firms 98 per cent. of the British wall-paper trade. The Associated Portland Cement Manufacturers (1900; £7,375,000) covered 80 per cent. of the output of the Thames and Medway; and late in 1911 an allied combine was formed to embrace the outstanding works. The tobacco trade is dominated by the Imperial Tobacco Co. (£14,500,000), formed in 1901 to repel an American invasion, and by the large firm of Gallahers. The grain-whisky, fire-clay, bath-stone, seed-oils, soap, and beer trades are dominated by amalgamations, while amalgamations in the tube industry and the Scotch malleable iron trade were arranged in

1912, and proposals for the cessation of competition in the marine engineering have been under discussion. In the shipping industry there have been numerous amalgamations, notably the Union Castle Line (1900; £2,000,000), the Ellerman Lines (1901; £770,000), and the International Mercantile Marine Co. (1902; £34,000,000). The last named was an Anglo-American union of the White Star, Leyland, Atlantic Transport, American, and Dominion Lines; at first it was under American rule, but the British interests, through the White Star Line, are now dominant. In the winter of 1911 the Royal Mail Steam Packet Co., which had previously absorbed the Pacific Steam Navigation Co. and the Elder-Dempster Co., purchased the ordinary stock of the Union Castle Line; earlier in the year these two companies had acquired the Lamport and Holt fleet and the Glen and Shire Lines; and their combined tonnage is 1,270,000 tons, the largest in the world. Shipping amalgamations were the feature of the year, others being the acquisition of the Anchor Line by the Cunard Co., of the Blue Anchor Line by the P. and O. Co., and of the Federal Steam Navigation Co. by the New Zealand Shipping Co.

11. **Germany.**—The legal position of industrial combinations is fully recognized in Germany. The Reichsgericht of Leipzig said, in a case decided in 1897: 'If in a branch of industry the prices of the products sink too low, and the successful conduct of the industry is thereby made impossible or is endangered, the ensuing crisis is injurious not only to individuals, but to the community as a whole, and it is in the interests of the community that unduly low prices should not exist in a branch of industry. . . . Therefore we cannot consider it simply and generally as a matter opposed to the interests of the community if the manufacturers participating in a branch of industry unite to prevent or moderate price-cutting and the fall in the price of their

products which it causes. Nay, rather, if prices are really continuously so low as to threaten industrial ruin, their combination can appear not only a justifiable action of self-preservation, but also as a measure serving the interests of the community.' The right to inflict penalties for breach of contract was recognized by a decision of 1902. One result of this legal recognition is the publicity of the statutes and proceedings of the combinations.

The movement towards combination arose from the crisis of 1873, and has generally taken the form of syndicates or agreements for a term of years to regulate prices (price conventions), to fix output (pools), or to conduct sales (sales associations, kartells). Only within recent years has there been any noteworthy development of amalgamations. Including local syndicates, there were in 1897 345 syndicates, of which in five years' time 100 had disappeared. In 1905–6 an official inquiry ordered by the Reichstag disclosed the existence of 384 combinations of different kinds—that is, in the coal industry, 19; iron and steel, 61; other metals, 11; chemical trades, 46; textiles, 31; leather, 2; india-rubber, 4; wood, 5; paper, 6; glass, 10; bricks, 132; cement, 7; chalk, clay, stone, 24; food and drink, 17; electric industries, 2; other industries, 7. The great development and activity of the kartells and syndicates aroused much hostility, and a public inquiry was held in 1902–3, in which the critics and defenders of the leading kartells were confronted in a kind of parliamentary debate. No legislative or administrative measures resulted.

The most notable of all the kartells is the Rhenish-Westphalian Coal Syndicate, founded in 1893 as a sales association for coal, coke, and briquettes; its first period was 1893–8, and it was renewed to 1905, and again to the end of 1915. In 1909 its output was about 80 million tons, and it covered all the Ruhr district except fifty mines, whose output was only 5 per cent. of that of the Syndicate. Its special difficulties have been the conflicting interests of mines selling to the public and of mines attached to iron and steel works, and the disputes at times of renewal of the contract arising from the efforts of the larger companies to extend their output and secure a larger quota. The renewal of the contract, which expires in 1915, has been for some time hotly discussed ; but the position of the Syndicate has been strengthened by the adhesion of the State mines, the sale of their coal being entrusted to the Syndicate in the beginning of 1912.

Pig-iron was strongly syndicated in 1897, but in the winter of 1908–9 three of the four syndicates were dissolved. In the autumn of 1911 a comprehensive association was reconstituted, embracing 54 members. The German Steel Syndicate (Stahlwerksverband) was formed in 1904 to unite sectional syndicates for half-finished steel (founded 1901), rails (1886), sleepers (1886), and girders (1901). Each member was allotted a quota of A-products (ingots, semi-manufactured steel, railway material, shapes and sections), which were to be sold only through the Syndicate. The output of B-products (plates, sheets, tubes, axles, wheels, tyres, etc.) was also regulated, but the sale was left to the members. The output of A-products in 1910 was 5,123,000 tons, and of B-products 5,658,000 tons. The Syndicate was renewed in the summer of 1912, but for A-products only, the sale of B-products being left free.

The maintenance of the home prices of semi-manufactured iron and steel, coupled with the export of these products at low prices, has seriously injured German workers of finished iron and benefited their foreign competitors. The syndicates have tried to counteract this by systems of bounties to finished iron manufacturers on the goods they exported, and by urging the formation of finished iron kartells. 'Mixed' works, combining pig-iron, steel, and rolling-mill products, have had much advantage over 'pure' works confined to one branch, and have extended their output of B-products where they had a freer hand. There has been a great struggle for supremacy within the Steel Syndicate, and numerous amalgamations and alliances have recently been made. Important ore and pig-iron firms in Lorraine and Luxemburg are building steel works, and the large firms are acquiring coal mines in order to free themselves from the Coal Syndicate. The Steel Syndicate may ultimately be replaced by the emergence of a comparatively small number of very large firms (as in Britain) maintaining independent but friendly relations with each other.

12. **United States.**—The combination movement in the United States is characterized by gigantic amalgamations. Pools, however, are to be found in salt and cordage, 1860–70; petroleum and whisky, 1870–80; cotton bagging, candles, rails, etc., 1880–90; wire rails, billets, rails, ore, etc., 1890 to date. The weakness of pools was that, as in the United Kingdom, they were illegal at common law, being in restraint of trade. They were short-lived, and acted violently on prices, so that high profits might be reaped before the inevitable crash came, either through the attraction of new competition or the disloyalty of members. Nevertheless, they have persisted even after the appearance of such huge amalgamations as the United States Steel Corporation, which entered into agreements with independent producers for the regulation of the sale of products. For example, the 'billet pool' was organized through the 'Gary dinners,' which were held periodically, under the chairmanship of the president of the corporation. It was dissolved in the spring of 1911.

The 'trust' form (already described) began with the Standard Oil Co. in 1882, and the Whisky Trust and the Sugar Trust, both in 1887. This early period was marked by destructive competition against outsiders in those districts where the trust had not a monopoly, while prices were held up elsewhere, and by illegitimate alliances with railroads, whereby special rates or rebates were obtained which were denied to their competitors. This railway discrimination was made illegal in 1887, and the trusts were dissolved by the courts in 1891–2. The Sherman Act of 1890 also enacted: 'Every contract, combination, in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several states or with foreign nations, is hereby declared to be illegal,' and penalized 'every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons to monopolize any part of the trade or commerce among the several states, or with foreign nations.' The Whisky and Sugar Trusts were now organized into single companies, but the component parts of the Standard Oil Co. were held together only by harmony of interests, until in 1899 advantage was taken of the complacent laws of New Jersey to form a great merger with a capital of 110 million dollars.

In the dull period, 1894–7, combination languished, but there was a great outbreak of corporate promotion in the prosperous period of 1897–1902. In 1900 there were 185 combinations, with 2,160 plants, 425,000 employees, and 3,093 million dollars issued capital. Of these, 40 were in iron and steel, 28 in liquors, 22 in food, 15 in stone, clay, and glass, 15 in chemicals, 11 in other metals than iron, 8 in textiles, 8 in wood, 7 in paper and printing, 6 in vehicles, 5 in leather, 4 in tobacco, and 16 in miscellaneous industries. The objects of the movement were to secure economies, to stop competition, and 'the creation of new securities for the sake of a stock-market profit.' 'The public demand for such securities was unusually active at this time. Indeed, the proportions of this movement were largely determined by the opportunity to market the securities thus created. So long as the demand for such issues was maintained, the supply was steadily increased' (*Report of the Commissioner of Corporations on the Steel Industry*, 1911, p. 6). Not only did the vendors of manufacturing plants obtain large prices for their property, but the promoters were allotted huge blocks of stock as commission. Generally live assets were covered by bonds and preferred stock, while common stock of an equal amount was issued as a bonus. Great overcapitalization resulted.

'The extent of consolidation in the iron and steel industry in the three years 1898–1900 was such as to transfer to less than a dozen concerns more than one-half of the steel-making capacity of the country, so far as primary products are concerned' (*Report* quoted, p. 79). Fresh competition on the part of the Carnegie interests was threatened, but the conflict was averted by the formation in 1901 of the United States Steel Corporation, under the auspices of Messrs. J. P. Morgan and Co., Mr. Carnegie being bought out. The new company absorbed the Carnegie Co., the Federal Steel Co., the American Steel and Wire Co., the National Tube Co., National Steel Co., the American Tin Plate Co., American Steel Hoop Co., and American Sheet Steel Co.—all themselves amalgamations—and later acquired ore mines, steamships, etc. Its total capital was about 1,403 million dollars, representing, according to the Commissioner of Corporations in the report already quoted, 676 million dollars in tangible property; in 1910 the capitalization was 1,468 million dollars, while the valuation of properties rose to 1,187 million dollars, showing that much of the original 'water' had been squeezed out of the capital. 'It would appear,' says the Commissioner (p. 39) 'that of the Steel Corporation's stock in 1901 at least 150 million dollars was issued either directly or indirectly for promotion or underwriting services, this being over and above the enormous amounts of common stock issued as a bonus for property and for cash.' This is typical of American trust flotation. The profits of the Corporation have been equal to a yearly average of 12 per cent. on its tangible property, but, though its business has increased, its output has declined relatively to that of the independent companies—in steel ingots, for example, its share of the total output fell from 65·7 per cent. in 1901 to 54·3 per cent. in 1910; its monopolistic character, according to the Commissioner, depends 'on its control of ore holdings and the transportation of ore.'

The 'Billion Dollar Trust' has struck the industrial imagination more than any other organization, which may excuse these details. The Standard Oil Co. has certainly been the best hated; the International Mercantile Co. (see p. 60) caused some fear lest British supremacy in shipping was threatened; the 'Tobacco Trust' (American Tobacco Co.), with a capital of 450 million dollars, made a vigorous attack on British industry in 1901, from which it retired defeated; the 'Whisky Trust' (Distillery Co. of America, issued capital 77½ million dollars); and the 'Sugar Trust' (American Sugar Refining Co., capital 75 million dollars), are perhaps the next best-known 'trusts.'.

Public uneasiness at the development of the trusts led from time to time to investigations, of which the most detailed was undertaken by the American Industrial Commission in 1901–2. It recommended greater publicity regarding the affairs of industrial corporations, and some form of federal supervision entailing the inspection and examination of the business and accounts of the corporations. No immediate action was taken, but the question of the control of the trusts gradually came into prominence in politics, and was involved in the question of the tariffs, which the trusts were accused of exploiting. At last suits were brought against the

Standard Oil and American Tobacco Companies, and, after prolonged litigation, the Supreme Court, in May 1911, ordered them to be dissolved into their constituent elements, as they had acted in 'unreasonable' restraint of trade. This decision appeared to imply that the court claimed unlimited discretion to interpret the terms of the Sherman Law of 1890; but Mr. Taft, in his message to Congress in December 1911, denied this, saying: 'A reasonable restraint of trade at common law . . . must be limited to accomplish the purpose of a lawful main contract to which, in order that it shall be enforceable at all, it must be incidental. . . . The courts never assumed power to say that such contracts (that is, in restraint of trade) or combinations or conspiracies might be lawful if the parties to them were only moderate in the use of the power thus secured, and did not exact from the public too great and exorbitant prices.' In October 1911 the Steel Corporation was proceeded against, and there the campaign stands at present. The decrees of the court in the oil and tobacco cases have been carried into effect; but the rearrangement of organization appears still to leave effectual control in the same hands as before.

13. **International Combinations.**—A word must be said about international agreements. The trust, pool, or syndicate controls domestic competition, but leaves international competition still active, and it is natural, therefore, that the combinations in the great industrial countries should join hands. An excellent example has been already seen in the Shipping Conferences, and the International Rail Pool of 1883–6 between Great Britain, Germany, and Belgium is also well known. Another rail pool was formed in 1904, embracing Great Britain, France, Germany, Belgium, and the United States, and providing for the allocation of output. The Nitrate Combination, now dissolved, was international. The tobacco war of 1901–2 was ended by the establish-

ment of the British-American Tobacco Co. (issued capital, £6,000,000, raised to £8,345,000 in October 1912), leaving to the Imperial Tobacco Co. the British Empire, and to the American Tobacco Co. the United States; while the new company took the rest of the trade. Petroleum, also, has been intermittently regulated. Several other examples might be given, but it will be sufficient to mention, as perhaps a portent of the future, that in the summer of 1911, Judge Gary, President of the United States Steel Corporation, came to Europe with proposals to unite the steel trade of the world for common purposes. His suggestions were received not unsympathetically, but the policy of the United States Government appears to have prevented anything being done, so far, in the matter.

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X.

Communism. See LABOUR AND POLITICS.

Compensation. See EMPLOYERS' LIABILITY.

Conciliation. See METHODS OF INDUSTRIAL PEACE.

Contributory Negligence. See EMPLOYERS' LIABILITY.

Co-operative Movement. See LABOUR AND POLITICS; FRIENDLY SOCIETIES.

CO-PARTNERSHIP, LABOUR.

1. *History: France.*
2. *History: England.*
3. *Types of Society.*
4. *The Transformation of Capitalism.*
5. *General Observations.*
6. *Bibliography.*

The term 'Labour Co-partnership' has found general acceptance in recent years in connection with the efforts to modify the wages system by the addition of some form of profit-sharing with, and capital-holding by, employees. The use of the term is not limited to any particular method, except, perhaps, that simple profit-sharing is usually regarded as only a step towards Labour Co-partnership, and that, in its more definite sense, the principle involves provisions for the employees to accumulate capital. A Co-partnership idealist would probably add that to be perfect there should be some form of employee representation in the administration. It is claimed that Co-partnership gives the employee increased interest in the economy and efficiency of production, coupled with the feeling that he is being more equitably dealt with in the division of the profits of industry, whilst capital-owning brings with it a greater sense of responsibility and a wider outlook.

1. **History: France.**—About 1838 many co-partnership and profit-sharing experiments were inaugurated in France, which is to-day the home of some of the most successful examples in the application of the principle. Stimulated by the progress of the French movement, several schemes were launched in England a few years later. The two French examples which have acquired most fame are the Maison Leclaire, Painters and Decorators, Paris; and the Godin Iron Foundry at Guise.

Leclaire came to Paris, at the age of seventeen, in 1818, and, while an apprentice, earned about £4 a year beyond his board and lodging. At twenty his money earnings were only £45 a year; but at twenty-six he started for himself as a house decorator, and shortly afterwards was offering wages of 4s. 2d. a day instead of the recognized 3s. 4d. In 1838 he established a 'Society of Mutual Help,' and the next year started a scheme for paying foremen and older hands special extra wages. Later on he inaugurated a scheme for dividing a share of the profits among the pick of his workmen; and, in order to convince them of his sincerity, he paid out the money due for the past year. Thus, in 1842 he divided £475 among forty-four workmen; in 1843, £490 among forty-four workmen; and in 1884, £780 among eighty-two workmen.

This profit-sharing scheme Leclaire brought to an end in 1863, for in that year he incorporated the 'Mutual' as a sleeping partner in the business, adding £4,000 to its capital of £1,600. The partners were to receive 5 per cent. on their capital, and the sleeping partner—that is, the Mutual Help Society—was to have 20 per cent. of the remaining profits. In 1869 Leclaire withdrew from active work, and the capital was fixed at £16,000, Leclaire supplying £4,000, his partner £4,000, and the 'Mutual' £8,000. It was arranged that 15 per cent. of the profits should go to the managers, 35 per cent. to the 'Mutual' Societies, and 50 per cent. to the employees, according to their wages and salaries. There are over a thousand employees.

Leclaire adopted the principle of working down from a select nucleus, or *noyau*, consisting of the pick of the men employed. The Noyau elect the Comité de Conciliation, which, in addition to other duties, settles disputes between an employee and the firm, and has the care of the apprentices. The two managing partners, who have all the powers and responsibilities of partners in a private firm, are *ex-officio* members of this committee, and with them sit eight other members, chosen by and from the Noyau, five of whom must be workmen and three superior employees. The Mutual Help Society, in January 1911, consisted of 127 members, and its assets were £160,000. The Society arranges for medical service, invalid pay, and pensions for its members, their widows, and orphans; but it also provides these, in a lesser degree, for those employees who are not members. Last year it paid the sum of £9,200 to some 220 members.

Although Leclaire is regarded generally as the originator of Labour Co-partnership, there were examples in France long before his time. The boldness and originality of many of the features of Leclaire's scheme entitle him, however, to rank as the greatest pioneer of the principle.

The Co-partnership Iron Foundry at Guise, with its branch establishment in Belgium, employs about 2,500 people. The way in which the founder, Jean Baptiste André Godin, provided in his scheme for overcoming many of the difficulties confronting the application of co-partnership is extremely interesting. Godin realized that to hand over to workmen, unprepared by previous education, the conduct of a great industry was to expose himself to a possible check. Accordingly, he took care only to bring to the direction of the enterprise those whose minds, in default of more systematic training, were at least ripened by experience. He wished that sharing in the management, with a correspondingly increased share of the profits, should be the reward of industry and good conduct—in other words, of the duration and quality of the services rendered. Hence, in drawing up the rules of the Society, he divided the workers into four classes, according to the seniority and merits of each.

There are: (1.) The helpers (*auxiliaires*), who include the more or less temporary employees. These obtain insurance against illness and accidents, and, in case of need, a pension. (2.) The profit-sharers (*participants*), who receive one share only in the profits, calculated upon the amount of their wages. (3.) The associates (*sociétaires*), who receive a share and a half in the profits—that is to say, at a rate, per £ of wages, 50 per cent. higher than the rate paid to the previous class. (4.) The first-class members, or partners (*associés*), who receive a double share of profits. On June 30, 1907, there were 422 first-class members, 71 associates, and 810 profit-sharers; whilst during the previous twelve months 907 persons had been employed as helpers for a longer or shorter time. There were also 683 persons who had ceased to work for the Society, but whose shares had not yet all been repaid. A worker who is able to read and write, and is worthy of it, may become a first-class member after being with the Society, and living in its buildings, five years. A profit-sharer living outside the *familistère*, but who has been employed for twenty years by the Society, receives a share of the profits at the same rate as an associate. Profit-sharers and associates who live in the *familistère*, and have been twenty years in the employ of the Society, receive profits at the same rate as first-class members. These, who at present number more than 300, are a picked band, and vacancies are filled up by the remaining first-class members. When they come together in general meeting, they give their advice upon all important expenditure outside the ordinary operations of the Society, and on every proposed improvement brought before them. Finally, both by the three members whom they elect to the Committee of Management, and by those whom they appoint to the Committee of Supervision, they exercise a measure of influence on the management of the Society. The Managing Director, who is chairman of the Committee of Management, is appointed by the general meeting of the first-class members. He exercises all powers by law belonging to the managers of what the French law calls 'societies in "simple commandite."' (In these societies the Managing Director has unlimited liability; all the other members have limited liability, extending only to the possible loss of their share capital. They are thus very similar to the 'limited partnerships' legalized in the United Kingdom by the Act of 1907.)

The Committee of Management, whose composition is fixed by the rules, includes the heads of the chief departments—namely, the Commercial Manager, the Works Manager, the Superintendents of raw material, of patterns, of the foundry, of the fitting-up shop, and of the stores; the Chief Accountant, the House Steward (*économe*)—that is to say, the head of the non-commercial services of the *familistere*—and the three committeemen elected each year, as above mentioned, by the first-class members.

The first charges upon the gross profits before any dividend is apportioned are the amounts for (1) depreciation of buildings and plant; (2) votes to the various mutual insurance funds; (3) the expenses of education; (4) the interest payable to the owners of shares. Of the remainder, 75 per cent. is allocated as a dividend upon the wages of labour and the wages (or interest) of capital, and 25 per cent. as the reward of ability. During these thirty-three years the total amount given to ability has been £127,976, apportioned as follows: to the Managing Director, £28,948; to the Committee of Management and the Supervising Committee, £65,724, and £18,499, being the balance of the 16 per cent., also to the Committee of Management. Of the remainder, £4,277 has been used for the maintenance of pupils in the Government schools, and £10,528 has been given as rewards for useful inventions.

Of the 25 per cent. allocated to ability, 4 per cent. goes to the Managing Director; 16 per cent. to the Committee of Management; and 2 per cent. to the Committee of Supervision; 1 per cent. to the maintenance in the Government schools of girls and boys who have passed through the schools of the *familistere;* whilst 2 per cent. is placed at the disposal of the Committee of Management to reward useful inventions and simplifications or improvements suggested by members for the benefit of the Society. During the thirty-three years from 1879–1911, profits amounting to £526,395 have been divided among the different classes of workers. The first-class members have received £115,450; the associates, £56,424; the profit-sharers, £96,765; and the helpers, £62,978, these last obtaining it through the benefits of insurance funds. Including £18,935 placed to reserved savings, this makes a total of

£350,552 paid on wages. A sum of £33,376 has also been paid as interest.

The original capital held by Godin having been paid out—its place being taken by capitalized employees' profits, for which savings certificates are issued—the workmen and office staff (including some who have retired from work) are at present the owners of the whole capital, which was fixed at £184,000 by the deed executed in 1880 by Godin and his fellow-workers, and is now £242,000.

2. **History: England.**—In England the movement took shape in two directions—(1) the establishment of workshops by such sympathizers with the principle as the Christian Socialists F. D. Maurice, Charles Kingsley, Tom Hughes, E. V. Neale, and John Malcolm Ludlow; (2) the adoption of profit-sharing by a number of ordinary capitalistic undertakings. The Christian Socialists worked through an association they formed, called the 'Society for Promoting Working Men's Associations.'

The capital to start workshops founded by this Association was supplied by the more or less wealthy friends of the movement. The rules provided for a fixed interest on capital, and for the employees to have practically all the remaining profit. The societies established by the Christian Socialists failed, although some, such as the Carvers' and Gilders' Society (London), lived many years.

The workmen these early societies brought together were not, so far as one can judge, necessarily the pick of any trade, nor had they received training in business habits and methods, such as workmen in their thousands get in their organizations to-day. Qualities which enable men to work together for mutual good have to be grown, and they grow slowly.

In 1884 a renewed effort was made to extend the practice of profit-sharing and Labour Co-partnership by the establishment of the 'Labour Association for the

Promotion of Co-operative Production, based on the Co-partnership of the Worker,' now called the Labour Co-partnership Association. From 1884 onwards this Association has been active in its efforts to extend the application of its principle, sending speakers to industrial and educational centres, and organizing conferences of people interested in industrial questions at which experts have read papers. It has published literature, including a monthly organ, *Co-partnership;* drafted rules for Workmen's Co-partnership businesses; met employers wishing to introduce the principle; and suggested schemes to meet the special conditions of each business.

3. **Types of Society.**—Working-class Co-partnership businesses divide themselves roughly into three classes: (1.) Societies which, in the main, consist of individual shareholders working for the society, or hoping to do so as the capital and business connection grow. (2.) Societies which consist something like equally of individual shareholders, as in Class 1, and Co-operative Store Societies, which provide part of the capital and a market for much, if not all, of their produce. (3.) Societies which are, in the main, federations of other societies, chiefly Co-operative Stores, but which have Labour Co-partnership provisions in the rules, whereby their employees are entitled to share in the profit and acquire capital.

The Walsall Locks and Cart Gear, Ltd., established in 1873, is an example of Class 1. At the end of 1911 it had a capital of £14,000, and for the five years 1907–11 it did a trade of £134,783, and made a profit of £8,237, £4,499 of which went as a dividend on the £61,574 wages paid. For the year 1911, after paying interest on its A shares at the rate of 7½ per cent., and B shares at the rate of 5 per cent., it declared 1s. 9d. in the £ on wages of labour, and the interest on capital. The Managing Committee, consisting of employees, is appointed by the shareholders, who are mostly employed in the Society.

The Garden City Press, Ltd. (registered 1904), ought, perhaps, to be specially noticed under this class because of the exceptional methods of remunerating its working partners. A calculation is made every week of the full value of the work done, at the established trade-union rate, but the working partners are not paid its value in cash. An advance is made week by week amounting to seven-eighths of this calculated amount of their earnings. At the end of each half-year a balance sheet is made up, and if the profit made on the business does not enable interest to be paid at the rate of 5 per cent. on shares, so much as may be necessary to do this is taken from the proportion of earnings left in by the working partners. But if more than sufficient is earned to enable this to be done, the working partners get practically all the rest, first to complete their earnings at the standard rate, secondly as a dividend on earnings. The dividend on earnings is only allocated after sufficient profit has accumulated to enable 10 per cent. per annum on the wages of the past half-year to be paid, which has latterly been the case. The Society started business in 1905, and now employs a staff of seventy.

The Kettering Clothing Manufacturers, producers of all kinds of tailoring, is an example of Class 2. Established in 1893, it did a trade of £100,578 in 1911, and, after paying interest on capital at the rate of 5 per cent., allocated 1s. 6d. in the £ on wages, 8d. in the £ on customers' purchases, and a further dividend on capital of about 2 per cent. This Society originated amongst the clothing operatives of the town of Kettering. It has a well-equipped factory, and works the eight-hour day. The Committee of Management, consisting partly of employees and partly of other shareholders, is elected at the shareholders' meetings.

The Ideal Clothiers, of Wellingborough, registered in 1900, is another society of this class. Its rules provide for the Board of Directors to consist of a president, secretary, manager, and seven members; of these seven not more than four are to be elected by the employees of the Society—or three if the president is an employee. Employees and other members vote separately, but all are eligible to stand for election. No member is eligible for the Board of Directors who has less than £20 in ordinary shares in the Society. Shares are divided into ordinary and accumulated; accumulated shares are all sums credited on shares to capitalize profits. The ordinary shares have preference in the payment of interest and in case of liquidation. Each employee is to continue applying for ordinary shares until he holds fully paid up shares (ordinary and accumulated) to the nominal value of his wages for twenty-six weeks, or £200, whichever be the smaller sum. Interest on shares is at the rate of 5 per cent., and is to be paid out of the accumulated shares if necessary. Ten shares are given one vote, and every fifty additional shares an additional vote. This plan of accumulating the workers' share of profits in a successful Society, it is suggested, offers the best guarantee that the ordinary share capital, owned by those at a distance who are unable to take a real part in its administration, is carefully protected, because the working shareholders on the spot who are owners of accumulated shares would suffer first from losses.

The trade in 1911 was £83,586, and, after paying 5 per cent. on shares, 1s. 6d. in the £ was allocated on wages, 9d. in the £ on customers' purchases, and a further 2½ per cent. on capital.

There are fifteen Co-partnership boot and shoe businesses established by workmen in the towns and villages in the Midlands, with a capital of £107,759. Their combined trade for 1911 was £296,979, on which a profit of £7,627 was made.

The Glasgow United Baking Society, established in 1868, producers of bread and biscuits of all kinds, is an instance of Class 3. Its capital is held entirely by registered societies, no individual shareholders being admitted. It is, in fact, a federation of societies. In order, however, that the employees may be included in the partnership, an Employees' Investment Society has been registered, and is, in its corporate capacity, admitted a member or partner in the federation. Employees may join the Investment Society, and receive a share of the profit of the federation. This profit they may accumulate as shares in the Investment Society, which invests it in the federation. The capital of the United Baking Society was, at the end of 1911, £460,000, and it did a trade for the year of £569,000, and made a profit of £52,000.

The profit is divided between the customer and the employee, being paid at the same rate per £ on wages and purchases. For the last three years this rate has been about 1s. 7½d. in the £, and the employees have received altogether, since the scheme was started, £197,710, in addition to their wages.

The Working-class Co-partnership Societies showed at the end of 1911 a total of 110, grouped in trades as follows: Textile, 15; Agricultural, 26; Boot and Leather, 18; Metal, 9; Building and Wood, 12; Printing, 14; Various, 11; Scottish (including C.W.S.), 5—Total, 110.

It is interesting to note that the two counties in the country in which workmen seem to have made most use of the co-partnership principle are those of Leicester and Northampton. In Leicestershire there are twelve co-partnership societies, and they are engaged in the following industries: boots and shoes, hosiery (Wigston Magna), basket-making, carriage-building, cabinet-making, printing, grocers' sundries.

In Northamptonshire there are ten, and they represent the manufacture of clothing, corsets, boots and shoes.

Since the Labour Co-partnership Association was formed, in 1884, the number of Co-partnership concerns established by workmen has grown from 15 to 110 at the end of 1911, and the capital from £103,436 to £1,991,551. Many of these are connected with the Co-operative Productive Federation, an organization established to extend markets and raise capital for its members.

4. **The Transformation of Capitalism.**—One of the largest Co-partnership developments through an ordinary company is in connection with the South Metropolitan Gas Company. The scheme was started in 1889, but its Co-partnership character has been strengthened from time to time. The first step gave the employees, in addition to the wages and salaries customary in their occupation, a dividend amounting to ¾ per cent. on wages for each penny reduction on the price of gas below an agreed standard—namely, 3s. 1d. per 1,000 cubic feet. Later on, arrangements were made for encouraging the employees to capitalize the profit they received in the shares of the Company or leave it on deposit. The Company next obtained power from Parliament providing that when the employees had not less than £40,000 in the Company's shares, they might elect representatives to the Board of Directors. Up to the end of June 1911 the employees had received £548,706 as a share of the profits, and 5,403 employees had invested in the capital of the Company £423,721. The amount divided for the year ending June 1911 was £43,043. The employee shareholders now elect *three* of their members as representatives on the board, out of a total of nine.

The South Suburban Company is a much smaller company, but it has adopted substantially the plan of the South Metropolitan. Its scheme began in 1894.

The employees have received £40,453 as their share of profits, and they hold £38,629 of the capital. They elected in 1907, for the first time, two directors on the Board.

The Commercial Gas Company is a much younger scheme, having been started in 1901. The total profits allotted to the employees at the end of 1911 amounted to £51,994, and over £49,350 was then invested by them in the Company's capital.

Co-partnership principles in recent years have made great headway in the gas industry, there being, at the end of 1911, 33 gas companies applying the principle. About 20,414 employees are taking advantage of Co-partnership schemes in these companies, which have a total capital of £50,409,996 out of the total paid-up capital of £92,000,000 invested in gas companies in the United Kingdom. These employees held, at the end of 1911, £672,479 in the stock of the various companies, and had allocated to them during the year 1911 £103,418. The total amount allocated to the employees since the introduction of the schemes has been £792,264, in addition to the standard wages or remuneration.

Another method of applying Co-partnership principles has been adopted by Messrs. Lever Brothers of Port Sunlight. The scheme provides for the creation of £500,000 par value partnership certificates, to be allotted to those who are considered desirable partners, and who are twenty-five years of age, and have been with the firm not less than five years. January 1, 1901, was taken as the starting-point of the scheme, so that those who at that date had been for five years in the employ of the firm, and were twenty-five years of age, became eligible for these certificates. The value of the certificates which may be issued to an employee is based on the amount of salary, working out roughly at 10 per cent. of the salary per year, so that an employee receiving £100 a year, and who has been em-

Particulars of Co-partnership and Profit-sharing

NAME OF COMPANY.	No. of Years Scheme has been in operation.	Capital in 1911. Total Share and Loan.	No. of Employees under agreement for Profit-sharing or Co-partnership.
South Metropolitan (a)	22	£8,325,340	5,403
South Suburban (b)	18	831,363	595
Newport (Mon.)	12	336,337	160
Commercial	10½	2,548,280	1,234
Chester	10	242,191	75
Epsom and Ewell	4	86,564	50
Leamington	4	77,450	111
Wrexham	4	136,120	59
Bournemouth	3½	683,309	396
Rugby	3½	59,327	45
Tottenham	3½	753,410	606
Tunbridge Wells	3½	178,266	135
Walker and Wallsend	3½	271,918	95
Wellingborough	3	90,853	63
Croydon	3	693,921	526
Dartford	3	112,346	37
Gas Light and Coke	3	29,154,146	9,257
Gloucester	3	228,302	113
Weston-super-Mare	3	114,557	74
Grantham	2¾	106,068	48
Cambridge	2½	199,201	173
Cardiff	2½	701,454	235
Carmarthen	2½	17,200	10
Enfield	2½	207,360	139
Ilford	2½	280,505	157
Waterford	2½	70,900	61
Watford	2½	181,873	100
Longwood	1¾	101,504	30
Wandsworth and Putney	1½	548,262	360
Bridgwater	1	51,413	33
Merthyr Tydvil	1	81,253	35
Harrow	—	191,618	90
Plymouth	—	385,000	289
Aldershot (c)	—	376,205	143
Liverpool (c)	—	1,986,973	1,307
Hertford (c)	—	22,000	30
	—	£50,409,996	22,273

(a) Three employee representatives on the Board. (b) Two employee repre-

IN BRITISH GAS COMPANIES AT DECEMBER 31, 1911.

Amount divided among Employees for Year ending December 1911.	Amount per cent. on Standard Wages.	Total Profit to Employees since Scheme was adopted.	Amount of Shares and Deposits held by Employees in the Company. Market Value on Dec. 31, 1911 (about).
£43,043 June	8¼	£548,706	£423,721
3,539	6½	40,453	38,629
595	5	6,595	5,225
6,474 June	6	51,994	49,350
329	5	2,536	2,031
111	—	433	724
403 June	5	1,435	1,562
338	7½	1,263	900
2,397	8	5,833	8,127
190 (1910)	6	620	620
3,403	6¾	13,876	14,296
650	6	1,935	2,132
372	4	1,288	4,390
252 June	5	766	750
1,823 June	5	4,373	10,795
164	4	498	534
32,546 June	3⅞	97,028	98,393
482 June	6½	1,289	1,105
338	5⅛	712	76
170 Mar.	5 Mar.	288	395
768 June	6	1,504	1,212
924 June	4	2,354	2,065
28	5	107	—
442 June	4	897	846
630	4	1,474	1,595
245	6	371	55
457	—	1,159	1,666
136	5	308	212
1,686 June	6¾	1,686	881
133	2¾*	133	112
80	3	80	—
270	4	270	—
—	—	—	80
—	—	—	—
—	—	—	—
—	—	—	—
£103,418	—	£792,264	£672,479

sentatives on the Board. (c) Commenced during 1912. * Staff get 10 per cent.

ployed for eight years, and who is in other ways qualified, may be allotted £80 in partnership certificates, this being increased by yearly increments of £10 until a maximum laid down in the scheme is reached. In the case of retired employees who have attained the age of sixty-five in the case of men or sixty in the case of women, or those who have retired from ill-health before reaching these ages, or in the case of widows of employees, the partnership certificates will be changed into preferential certificates on the basis of ten years' purchase of the average dividends paid on the partnership certificates. As to dividends, preference shares first receive 5 per cent. and 6 per cent. as provided in the Articles of Association; then 5 per cent. is paid to ordinary shares, next 5 per cent. on preferential certificates held by the aged and retired employees, after which partnership certificates and ordinary shares participate equally in any profit, so that, if it is possible to pay ordinary shares a further 5 per cent., making 10 per cent. in all, partnership certificates get 5 per cent. It is claimed that giving ordinary shares 5 per cent. start is perfectly fair, seeing that they represent cash paid or its equivalent, whereas in the case of the partnership certificates no cash is paid for them by the employee.

At the first distribution, on July 23, 1909, partnership certificates representing nominal capital of £116,064 were distributed, whilst the total allotment of Co-partnership certificates to employees up to January 1, 1912, was £298,731. At the distribution on January 1, 1912, a 10 per cent. dividend on the certificates, amounting in all to £28,708, was announced by Mr. Lever, the total amount of dividend paid to co-partner employees up to that date being £56,725.

William Thomson and Sons, Ltd., of Woodhouse Mills, Huddersfield, have practised Co-partnership for twenty-five years, and the employees now own a considerable portion of the capital of the business. For the year 1911 a profit of £3,962 was made, of which £838 was allocated on earnings and £628 put to the pension fund.

Messrs. J. T. and J. Taylor, woollen manufacturers of Batley, began profit-sharing in 1896. Up to 1909 the scheme provided that, after meeting all wages and other fixed expenses, the first charge on any profit was 4½ per cent. interest on share capital. Any surplus profit remaining after meeting this charge was divided at an equal rate per £ of capital and wages. In February 1909 Mr. T. C. Taylor, M.P., announced that in future each employee must allow his share of profits to accumulate until it equals his year's earnings.

In addition, he added that it had been provided that 'To all those employees not less than twenty-one years of age, who have been five calendar years in the company's service, and who own shares to the amount of half a year's wages, we shall, in future years, give double the bonus received by other employees. For instance, in a year when the bonus on wages is, say, 7½ per cent., an employee whose wages for the year amount to £70, who owns shares to the extent of £35, who is not less than twenty-one years of age, and has been five calendar years with the company, will receive a bonus on his wages of 15 per cent., instead of 7½ per cent.—that is, he will get £10, 10s. instead of £5, 5s. as hitherto.'

At the same time, it was decided that in future the initial rate of interest or dividend on capital should be 5 per cent. instead of 4½ per cent. Out of 1,500 employees, 1,110 were shareholders at the end of 1911, whilst up to the same date nearly £98,000 had been apportioned to the employees under the scheme. The dividend on all shares for 1911 was 15 per cent., the bonus on wages (given in shares) 10 per cent., and a further 10 per cent. to those qualified for the double bonus. Those owning £50 worth of shares who had received during 1911 £70 in wages obtained £7, 10s. dividend on shares, and £14 in new shares, or £21, 10s. altogether, equal to 8s. 3d. per week for a year.

Under the 'Limited Partnership Law,' which came into operation on January 1, 1908, a body corporate may become a limited partner in a business without interfering with the old trade name or in any way affecting the private character of the firm.

The first firm to adopt this course was Messrs. Gilbert Brothers of School Lane, Nantwich, an important firm of wholesale boot and shoe manufacturers. The two Messrs. Gilbert formed the employees into a society called Gilbert Brothers' Employees, Ltd. This Society and the two Messrs. Gilbert have entered into a deed of partnership, under which the Messrs. Gilbert become the general partners, and the Society the limited partner. A limited partner incurs no liability beyond the amount of his—or, in this case, its—share in the business; while the general partners remain responsible for the debts of the business to the full extent of all they possess, like the partners in any ordinary private business. On the other hand, the limited partner must not by law interfere with the management of the business beyond exercising some very limited powers of consultation.

The deed of partnership in this case provides that after moderate salaries for the general partners, depreciation, and interest on capital at 5 per cent., the remaining profit shall go to form a profit-sharing fund until 1s. in the £ shall have been paid on wages, and after that a reserve fund. Provision is made that, as the capital of the employees' Investment Society in the business increases, the general partners' capital shall be reduced; and that, when the general partners have been paid out, the business shall belong to the employees' Society solely, and be carried on with limited liability.

Foster, Sons, and Co., Ltd., is a builders' company at Padiham, Lancs. It has arranged for its employees to organize and register themselves as an Employees' Investment Society under the Industrial and Provident Societies Act. The Employees' Investment Society has become, in its corporate capacity, a partner in the firm of Messrs. Foster, Sons, and Co., Ltd. By an agreement between the Company and the Employees' Investment Society, after all fixed charges have been met and 5 per cent. interest has been paid on capital, 40 per cent. of the net profits goes to the Employees' Investment Society, and is credited in that Society as £1 shares to the individual workers. The Investment Society invests the total amount in the Company, and holds the same in its corporate capacity, having representation at the meetings of shareholders proportionate to its investment in the Company.

Messrs. Clarke, Nickolls, and Coombs, Ltd., of London, have successfully worked an interesting profit-sharing scheme for some years. The business was founded in 1872, and became a limited liability company in 1887. In 1890 the shareholders sanctioned a scheme of profit-sharing with their workpeople. After paying ordinary shareholders 6 per cent. on their capital, the surplus profits are divided in equal proportions between the workpeople and the shareholders—a plan which in 1911 gave the employees £13,250. For twenty-two years the total is £172,025. All who have worked one year participate in the profit, whilst the profit accruing to the wages of those who have not worked one year and fulfilled other necessary conditions is carried to a provident or superannuation fund. The bonus is given in cash, but every encouragement is given to the workpeople to acquire shares, and their holding is considerable.

Mr. N. O. Nelson, the head of the N. O. Nelson Manufacturing Co., St. Louis, U.S.A., founded his

Co-partnership scheme on that of Leclaire; and when he took his factory out into the country and built a model village for his workpeople he named it Leclaire. In a letter on his scheme, written in 1910, Mr. Nelson says: 'A quarter of a century ago this month we started Co-partnership. From allowing an equal dividend on capital and wages, we have come to allotting all the profits to employees and customers, after paying simple interest on the capital. For the last six years dividends to wages have varied from 10 to 30 per cent., averaging 25 per cent. The dividends are paid in shares. The employees now own about four-sevenths of the capital and surplus, say about £175,000. In independently owned homes a large part of the employees live in the town of Leclaire, which is now of age, and has never required a jail, police officer, rules, or "boss."'

There are other cases where there is no sharing of profit upon wages, but where the employees are encouraged to invest in the capital of the business. Sir William Armstrong, Whitworth, and Co., Ltd., of Newcastle have adopted a plan of enabling employees to invest in Employees' Debentures, with a guaranteed minimum interest of 4 per cent., and a maximum interest varying with the dividend on ordinary capital. The following figures show the growth of investment by employees—1901, £124,306; 1905, £195,500; 1909, £231,363; 1910, £237,852.

Messrs. Hazell, Watson, and Viney, the well-known printers, have an interesting scheme for encouraging their 1,500 employees to invest in the firm through shares and deposits. There are now 1,041 deposit accounts open, and the amount on deposit is £13,714, at 4 per cent. per annum. As security the firm has placed 4 per cent. debentures to the amount of £14,000 in the hands of trustees, so that, whatever happens to the business, the depositors are safe. Deposits may be withdrawn without notice, though the firm retains, as a safeguard, the right to ask for three months' notice. Some of the money is again used for thrift purposes by being lent to employees who may wish to buy a house, or in any other way to improve their position in life. By this means fifty-four loans have been granted, amounting to £12,862, of which upwards of £9,327 has been repaid. Connected with the loan is an insurance scheme, whereby, if the borrower dies before the loan is repaid, the whole debt is wiped off. The shareholding of the employees is also growing. About 300 persons hold shares, which the company has enabled them to buy at less than the market value. The market value of the shares thus held is about £18,000.

5. **General Observations.**—It will be seen from the examples given that the principle of Labour Copartnership finds expression in a variety of ways, and that it has not been crystallized into a cut-and-dried system. The important feature common to all is that which gives to the employees a share of the profits of the business, and encourages them to accumulate the same in some class of capital issued by the business. Through the ownership of capital the employee secures a share in the practical education which arises from taking that interest in the conduct of a business which the owners of capital have the opportunity to take. There surely can be no doubt, whatever be our view of the future of industry, that it is desirable to put workmen, wherever possible, in the way of acquiring more material wealth by their own energy, and to encourage them to use that wealth, as far as their immediate economic wants will allow, in acquiring a larger share of the capital of the country. This may be thought a humdrum way of improving the workman's lot; but if we look around on his life to-day, and consider what he owes on the economic and intellectual side to methods such as these, and what he owes to

efforts at short cuts to the millennium, the value of these plodding and at times painfully slow methods is clearly seen. As to the formation of Co-partnership concerns by groups of workmen, these obviously succeed best in those businesses in which a beginning can be made with small capital, and in which the skill and character of the workmen are relatively important. They are further helped by having a sympathetic market which workmen's stores provide in the early days. Some groups of workmen have a greater aptitude than others for selecting a good man and trusting him with the necessary power. Again, constitutional methods of solving difficulties come naturally to some natures, whilst a bitter and wrecking spirit seems to animate others.

The constitution of many of the Co-partnership concerns established by workmen in the country is not the most satisfactory for securing strong and efficient administration and management. It will be seen that Leclaire and Godin took elaborate precautions to this end in drawing up their schemes, which have stood the test of experience very well. The great difference between their schemes and most of those adopted by groups of workmen in England is, that whereas in the Leclaire and Godin examples the most elaborate provisions are made for securing that the administration and management shall be in the hands of the competent, responsible, and experienced men, in the English schemes little is done to secure this end, the assumption underlying the constitution being that one man is as good as another —a theory which, whatever its justification in other departments of human activity, in industry and business is fatal to continuous success. No great expansion of Co-partnership workshops organized by groups of workmen is likely to take place until this problem of selecting and giving a better chance and security to men of experience and capacity is handled more satisfactorily than it is to-day. What has been done by groups of workmen is, it is true, a wonderful tribute to their organizing capacity and self-discipline; and if we could have a few experiments off the beaten track showing how the problem referred to can be better met, this side of the movement might develop on a much larger scale.

The largest field for the extension of the principle must, however, be in the great world of industry where capital exists, and the task of building up a business connection has been accomplished, and much of the difficulty which confronts a workmen's society just starting has been got over. The examples given show that in the case of established businesses there are many ways of introducing Co-partnership which seem to meet the special conditions of a great variety of businesses, and, given the spirit of Co-partnership amongst employers and workmen, the practice of this principle might become much more general.

6. **Bibliography.**—*International Co-operative Bibliography* (King, 1906). Ernest Aves, *Co-operative Industry* (Methuen, 1907). T. W. Bushill, *Profit-sharing and the Labour Question* (Methuen, 1893). C. R. Fay, *Co-operation at Home and Abroad* (King, 1908). N. P. Gilman, *Profit-sharing between Employer and Employee* (Macmillan, 1892). Benjamin Jones, *Co-operative Production* (Clarendon Press, 1894). H. D. Lloyd, *Labour Co-partnership* (Harper, 1898). Publications of the Labour Co-partnership Association (6 Bloomsbury Square, W.C.), and of the Co-partnership Publishers (73 Southampton Row, W.C.). H. V.

Corners. See COMBINATIONS, INDUSTRIAL.

COST OF LIVING.

1. *Scope of the Subject.*
2. *Collection of the Statistical Material:*
    - (1.) *Family Monographs.*
    - (2.) *Workmen's Budgets:* (*a*) *Forms of Inquiry;* (*b*) *Housekeeping Books.*
    - (3.) *Collection of Retail Prices.*
3. *Comparisons:*
    - (1.) *Distribution of Expenditure in the Several Classes.*
    - (2.) *Cost of Living in Different Parts of the Same Country.*
    - (3.) *Cost of Living in Different Countries.*
    - (4.) *Cost of Living in the Same Country at Different Times.*
4. *Bibliography.*

1. Scope of the Subject.—Cost of living, as that term is now generally understood, means the pecuniary cost of the commodities and services actually received by the mass of the people. It presents a problem which only arises after the use of a currency has become general. But in modern industrial societies the subject is one hardly second in importance to that of wages (that is, money wages). If *nominal* wages are to be translated into *real* wages, it is necessary to know, not only the pecuniary amount of the earnings, but also the quantity and quality of the commodities for which they can be exchanged.

In the usual sense of the term, 'cost of living' does not mean the cost of bare subsistence, whether of the commodities actually purchased by persons on the verge of starvation, or of the commodities which would just suffice to sustain life if purchasers were guided by dietetic considerations. It means the actual expenditure of each of the several grades of which the body of a nation is composed. Primarily, of course, it is 'the working classes' that have to be considered. How far it is desirable to inquire into the expenditure of the middle or wealthier classes is a matter for consideration, but evidently it is not so urgent or fundamental a problem.

The first object of an inquiry into the cost of living is the ascertainment of the facts with regard to the expenditure of a particular individual or family, or of a typical individual or family of a particular grade or class, during the period (week, month, or year) chosen for the investigation. The figures, when obtained, afford valuable information. They indicate, for instance, how the expenditure is distributed over the various kinds of wants—food, housing, fuel, etc.—and how much remains over for other purposes when necessary wants have been supplied. But having ascertained, in this way, some particular cost of living, we cannot but go on to compare it with other costs of living. We naturally desire to compare the total cost, or the manner in which it is divided, in the case of a particular class, with that of the same class at a different time in the same country, or at the same time in a different country or in a different district, or of a different class in the same country. The subject, therefore, roughly divides itself into the primary investigation and the subsequent comparison, and these may now be considered in order.

2. **Collection of the Statistical Material.**—The vast majority of the people live in families, and hence it has been generally agreed that family expenditure should be the main field of inquiry. The first problem, then, is how to obtain the facts as to the expenditure of working-class families. And it may be said in general that it is comparatively easy to obtain approximate conclusions, sufficient for most practical purposes, and exceedingly hard, if not impossible, to

arrive at absolute exactitude and completeness. There are several methods, of which each has its ardent advocates, and each its own place and use. They range from the most 'intensive' to the most 'extensive.' There is (1) the family *monograph*—studying a single typical family in relation to the whole of its life and environment, and centring in a budget of income and expenditure. Such was the method initiated by Le Play in 1855 (*Les Ouvriers Européens*), and continued by his school. In Germany it has been advocated and exemplified by Schnapper-Arndt; and an example in English may be found in the monograph on a Birmingham toolmaker in De Rousiers' *Labour Question in Britain* (English translation, 1896). The method is fruitful in instruction, but it can be successfully applied only by a trained investigator, endowed with no little tact; it necessarily involves a great expenditure of time and money. These reasons are enough to explain why comparatively few such monographs have hitherto been produced. It should be added that there is some danger lest the family selected should not be really typical. In truth, the choice of a family as typical implies a good deal of preliminary knowledge of the conditions prevailing in the class to which it is supposed to belong.

Large bodies of evidence may be far more easily and rapidly obtained if the inquiry is (2) limited to *workmen's budgets* of receipt and expenditure. This is the method first, apparently, attempted by Arthur Young (1767), and afterwards by Sir Frederick Eden (*State of the Poor*, 1797). It was revived by the first International Statistical Congress at Brussels in 1853, and exemplified in the work of Ducpétiaux, *Budgets économiques des Classes Ouvriers en Belgique*, 1855. Since then, and especially during the last forty years, it has been repeatedly employed, on a small and on a large scale, in most of the civilized countries of the world. Where the collectors of the information have had sufficient local knowledge, they have often been able to supplement the bare figures of the budget with useful explanations as to the conditions under which the several families live. Examples will be found in Carroll D. Wright's *Sixteenth Report of the Bureau of Statistics of Labor* (Boston, 1875), Charles Booth's *Life and Labour of the People*, Vol. I. (1889), *Family Budgets collected by the Economic Club* (1896), Rowntree's *Poverty* (1901), and Lady Bell's *At the Works* (1907). But inquiries extending to large numbers of families and carried out by statistical offices can hardly go beyond the bare numerical facts. And the first question which arises in relation to such official inquiries is the means by which the information is to be obtained.

(*a*) The most usual method is the circulation of *forms of inquiry*, containing a statement of the information desired, and blank spaces to be filled up by the informant (usually the head of the family). An example of such a form, limited to food and rent, will be found in the so-called *Second Fiscal Blue-book* (*British and Foreign Trade and Industry*, 2nd Series, Cd. 2337, 1904). The adoption of the plan in this case brought in 2,283 returns from all parts of the United Kingdom, of which 1,808 were complete enough to be available for statistical purposes. Returns of this kind are almost necessarily restricted to the expenditure of a short period ; and the inquiry of the Board of Trade just referred to related to a single week in summer. It is a matter for argument how far the large bulk of the evidence thus obtainable makes it possible, by a process of averaging, to overcome the defects of the individual returns—defects due to the circumstance that family expenditure cannot be evenly distributed through the weeks of the year.

(*b*) A method preferred by many recent statisticians, and, indeed, described by some as the only truly scientific plan, is to compile the figures of expenditure from *housekeeping books*, covering at least twelve months. It is ideally desirable that such books should have been filled up, in the first instance, purely for housekeeping purposes, without any ulterior object, and that they should be available for each household for a series of years. But perfectly independent and reasonably complete housekeeping books are at present difficult—probably impossible—to obtain from working-class families. Repeated advertisements by Professor Stephan Bauer in the press of Basel secured books from only four families, relating, in the case of the longest series, to six years out of a period of nine (*Basler volkswithschaftliche Arbeiten*, No. 2, 1911).

For this and other reasons, statisticians who rely on this method have usually felt compelled themselves to prepare suitable account books, and invite the public to make use of them. Thus the German Imperial Statistical Office furnished 3,575 families with account books, and of these 960 were satisfactorily filled up for a whole year (1907). Similarly, the statistician of the Commonwealth of Australia, Mr. G. H. Knibbs, issued 1,500 account books to applicants in 1910, and of these received back, in 1911, 222 'filled up either in whole or in part for the period of fifty-two weeks under review' (*Inquiry into the Cost of Living in Australia*, 1911).

The difficulties in the way of 'intensive' inquiries have often turned official investigation towards the 'extensive method' of (3) *collection of retail prices* from shopkeepers. It is necessary to be sure that the prices are those of the qualities actually bought, and of the shops frequented, by the working classes. True retail prices can at present be obtained for but few commodities for any considerable period of the past; but now that the various statistical offices are beginning to collect retail prices year by year, this obstacle is one which will disappear in course of time. The prices, when ascertained, can be combined and compared by means of *Index Numbers* (see MEASUREMENT OF INDUSTRIAL

CHANGES). These numbers may either be simple averages (derived from the several percentage relations of the price of each commodity in one year to the price in a standard year), or, if greater accuracy be desired, the figures for the several commodities may be *weighted* in proportion to working-class consumption. When, in any country, a collection of workmen's budgets has recently been brought together, these budgets may be made to furnish the weights or proportions to be used in preparing the retail price index numbers. Such has been the method employed in certain British official reports, referred to below. If food prices are to be combined with rents, cost of clothing, cost of fuel, etc., in order to approximate more closely to *total* cost of living, the figures representing the several constituent elements of total cost will also need to be weighted in proportion to the share they demand of the family expenditure; and the data necessary for this purpose must be obtained by adequate inquiry.

The material, however collected, must usually be combined by the method of average. But care must be taken that the resulting figure is a fairly *typical* average, and not a merely *arithmetical* one—that is, that it presents a picture to which the great majority of the observed instances pretty closely approximate. Hence it will commonly be necessary to break up the mass of figures, and arrange them in classes according to income. The selection of the income limits for the several classes, and the combination of results in order to get, if it is desired, a figure for the working population as a whole, are tasks which call for judgment and for a good deal of preliminary knowledge of working-class conditions.

The complications due to the differing sizes of families and the varying ages of their members—complications but imperfectly met by the selection of 'normal families'—led the German statistician Ernst Engel to recommend the employment of a 'unit of consumption,' which, in honour of the great Belgian, Quételet, he suggested should be called a *Quet*. And he proposed the following scale: for each child under one year, 1 quet; for each additional year an addition of ·10, until the highest figure for a man—namely, 3·5 quets—is reached at twenty-five years of age, and the highest for a woman—namely, 3 quets—at the age of twenty. Although the substantial correctness of this scale has been confirmed by much evidence, it has not yet been universally adopted. Indeed, the Danish, German, and American statistical offices have each in recent years employed other units of their own.

3. **Comparisons.**—Turning now to the various comparisons based upon the collected figures, it will be here possible only to give a few of the more important examples, without entering upon criticism, which would have to be both minute and technical to be of much use. It may, however, be said in general that most of the figures now to be given are open to criticism in one respect or another. The scientific treatment of the subject is still in its infancy; and, while the general trend of the conclusions is usually fairly trustworthy, it would be unsafe to base any argument upon the details. Differences, for instance, of 5 per cent. are too likely to be due to differences or defects of method to be safely regarded as significant.

(1.) *Comparison of the Distribution of Expenditure in the Several Classes.*—Practically all later investigations have confirmed a proposition which was first formally stated by Engel in 1857; though it must, indeed, have always been suggested even by superficial reflection. 'Engel's law' is that 'the poorer a family is, the greater is the proportion of its income which must be devoted to the purchase of food.' This was illustrated by the following table, which has become classical:—

Percentage of Expenditure of Saxon Families in 1853.

	Working-Class Family.		Middle-Class Family.		Well-to-do Family.	
Food	62·0	95	55·0	90	50·0	85
Clothing . . .	16·0		18·0		18·0	
Housing . . .	12·0		12·0		12·0	
Fuel and light .	5·0		5·0		5·0	
Education, worship, etc. . .	2·0	5	3·5	10	5·5	15
Legal protection .	1·0		2·0		3·0	
Care of health .	1·0		2·0		3·0	
Personal services.	1·0		2·5		3·5	

The lesson of this table is confirmed by the following percentages, calculated from the figures in a recent English report :—

Expenditure of Urban Workmen's Families in the United Kingdom in 1904.

Average Weekly Income. s.	d.	Percentage expended on Food.
21	4	67
26	11	66
31	11	65
36	6	61
52	0	57

In the United States, in 1891, the expenditure on food fell from 49·6 per cent. in families with an income of less than $200 to 28·6 per cent. in families with an income of $1,200 and above.

The conclusion of Engel that housing demands the same proportion of income whatever its amount was called in question by Schwabe in 1868, on the ground of certain Berlin figures. ‘Schwabe's law’ is that ‘the better off a family is, the larger is the positive expenditure, but the less the proportionate expenditure, for rent;’ and this proposition has since been confirmed by other German as well as by American and Australian statistics.

(2.) *Comparison of the Cost of Living in Different Parts of the Same Country.*—The English Board of Trade has issued, in 1908–11, Reports on the *Cost of Living of the Working Classes* in the principal industrial towns of the United Kingdom, Germany, and France in 1905, and in the United States in 1909. The elements included were retail prices of food and fuel, and rents of working-class dwellings. The price figures were weighted in proportions derived from family budgets; the rent figures were obtained by a process of averaging from the 'predominant' rents for the sort of accommodation most typical of each locality, compared with those for the same accommodation in the capital; and, in the final reckoning, prices were given a weight of four and rents a weight of one. The following are examples of the results for the United Kingdom:—

Index Numbers of Working-class Cost of Living (Food, Fuel, and Rent) in Towns in the United Kingdom in 1905.

London	100	
Manchester	86	
Liverpool	86	
Birmingham	85	
Leeds	86	
Sheffield	85	
Bristol	87	
Bradford	88	
Scotland (10 towns)	95	average
Ireland (6 towns)	87	"

Even within the limits of the United Kingdom, there are local differences in the character of the consumption which embarrass the comparison. The report above quoted remarks as follows: 'The index numbers for food prices are based on the prices usually given for a uniform list of commodities; but oatmeal is consumed largely by the Scottish working-classes, but hardly at all in England; while, on the other hand, foreign and colonial meat, a common article of food in England, is much less used in most parts of Scotland. Consequently, these two articles had to be excluded from the common list, although they are important articles of working-class diet.' It may be doubted whether this was the best course to take.

(3.) *Comparison of the Cost of Living in Different Countries.*—This has also been attempted in the series of English reports cited under the previous heads. But here the differences in habits, and, indeed, in needs, owing to climatic conditions, are so great that it may be doubted whether statistical comparison is possible. One conceivable procedure would be to select working-class families of substantially the same social position, and enjoying, on the whole, the same degree of comfort—if such could be found—and to compare their cost of living in their several countries. Instead of attempting anything of this kind, the Board of Trade has preferred to estimate how much more or less his living would cost an English workman who migrated to one of the foreign countries in question, and sought to live in his old way, and how much more or less his living would cost a foreign workman who came to England and pursued a similar unlikely course. The results of the inquiry may be summarized thus :—

The expenditure on food, fuel, and rent of an English workman migrating to the undermentioned countries, and maintaining as far as possible his English mode of life and English dietary, would be increased (+) or reduced (−) by the following percentages :—

Germany	+19
France.	+14
Belgium	− 6
United States. . . .	+52

It is important to remember that these figures cannot be taken as indicating the degree or character of differences in general 'well-being' or comfort, since they exclude from the expenditure on food some not unimportant articles peculiar to the several countries (for example, from the German comparison, tea and coffee), and include neither wine, beer, tobacco, nor clothing; they take no account of differences in national and local taxation; and they include no reference to differences in average income. These are omissions possibly capable of statistical treatment; but the differences in needs or tastes due to differences of climate and social habits can never be adequately allowed for.

(4.) *Comparison of the Cost of Living in the Same Country at Different Times.*—Only one official report has hitherto been issued in Great Britain on the changes in (approximately) the *total* cost of living over a considerable period. This covers the years 1880–1903, and has been obtained by adopting the following weights—food 7, rent 2, clothing 2, fuel and light 1, and it is given in the *Second Fiscal Blue-book* (1904, Cd. 2,337).

Changes in Cost of Workmen's Expenditure in London and Large Towns in Great Britain on Food, Rent, Clothing, Fuel, and Light (1900 = 100).

1880	121·7	1892	102·3
1881	120·8	1893	99·5
1882	120·4	1894	96·8
1883	120·2	1895	93·7
1884	112·9	1896	91·7
1885	106·1	1897	95·7
1886	102·5	1898	99·3
1887	99·2	1899	96·0
1888	98·9	1900	100·0
1889	101·1	1901	102·4
1890	100·6	1902	100·7
1891	102·2	1903	101·4

The food figures which entered into the above calculation were weighted in accordance with relative consumption, as shown by certain workmen's budgets. Mr. G. H. Wood, however, has published in the *Journal of the Statistical Society* for March 1909 a 'frankly experimental' series of index numbers for cost of living during the much longer period 1850–1902, including rent and an unweighted index number for 'all commodities of ordinary consumption for which records were obtainable.'

Cost of Rent and Commodities in the United Kingdom (1850 =20s.).

1850	20·0	1877	22·7
1851	19·6	1878	22·3
1852	19·6	1879	21·3
1853	21·0	1880	21·9
1854	23·7	1881	21·6
1855	24·4	1882	21·7
1856	24·3	1883	21·3
1857	23·2	1884	20·9
1858	21·6	1885	20·2
1859	21·4	1886	19·6
1860	22·1	1887	19·2
1861	22·6	1888	19·2
1862	22·1	1889	19·6
1863	21·5	1890	19·6
1864	21·3	1891	19·8
1865	21·5	1892	19·8
1866	22·7	1893	19·3
1867	23·9	1894	19·0
1868	23·5	1895	18·6
1869	22·6	1896	18·5
1870	22·6	1897	18·9
1871	22·7	1898	19·2
1872	23·8	1899	19·0
1873	24·1	1900	19·5
1874	23·4	1901	19·7
1875	22·7	1902	19·9
1876	22·3		

With these may be compared the following percentages calculated in the French Ministry of Labour, which go considerably further back:—

Variation in Cost of Living in Paris (1900 = 100).

1810	74	1890	103
1820	80	1900	100
1830	83·5	1905	100·5
1840	84·5	1906	99
1850	85·5	1907	100
1860	95·5	1908	102
1870	103	1910	104
1880	110		

It is, of course, to be understood that all these percentages are calculated on the assumption that the same commodities in the same quantities are consumed throughout. It is the difficulty involved, first, in the assumption of uniform wants, and then in finding continuous price quotations for the same commodities and qualities which renders it well-nigh impossible to deal satisfactorily with long periods. The estimates for the first half of the century in the French table just quoted are of somewhat doubtful value.

Though the English official figures for approximately the *whole* cost of living are limited to the period 1880–1903, there have been other official calculations as to the percentage changes in the cost of *food*, which constitutes some seven-twelfths of working-class expenditure.

Percentage Changes in Average Retail Prices of Food to a Workman's Family in London (1901 = 100).

1877	143	1890	102
1878	134	1891	104
1879	128	1892	104
1880	136	1893	98
1881	133	1894	95
1882	133	1895	91
1883	133	1896	87
1884	122	1897	94
1885	111	1898	100
1886	105	1899	93
1887	100	1900	96
1888	100	1901	100
1889	104		

The foregoing table, from the *First Fiscal Blue-book* (1903, Cd. 1,761), is based on the retail prices of bread, flour, potatoes, beef, mutton, bacon, butter, tea, and sugar, weights being assigned which were derived from the budgets collected by the United States Bureau of Labour in Great Britain in 1890–1.

The last table to be here given shows the changes in the retail price of twenty-three articles of food in London, weighted in accordance with the proportions found in the budgets collected by the Board of Trade itself in 1904, and reported on in the *Second Fiscal Blue-book.* The figure for each successive year is now given in the January number of the *Labour Gazette.*

Percentage Varieties of Retail Prices of Food in London (1900 = 100).

1895	93·2	1904	104·3
1896	92·0	1905	103·7
1897	96·2	1906	103·2
1898	100·8	1907	105·8
1899	96·4	1908	108·4
1900	100·0	1909	108·2
1901	101·9	1910	109·9
1902	101·6	1911	109·3
1903	103·2		

This evidence sufficiently indicates that the cost of living rose in the first half of the 'fifties; that then it remained on much the same level, though with wide fluctuations, down to 1873; that from that year it fell pretty steadily to 1896; and that since then it has again been rising. And inasmuch as in this country both the cost of living figures and the retail price figures are found to follow the same general direction, for the periods they have in common, as the index figures for wholesale prices which have been compiled by Mr. Sauerbeck and others, we are justified in supposing that they must also have followed the general trend of wholesale prices during the first half of the nineteenth century. That is, they probably fell, at first rapidly and then slowly, and with considerable fluctuations, from about 1810 to about 1850.

It should not be forgotten that an increase in the cost of living is not necessarily disadvantageous to the working classes. Whether this is so or not will depend on whether labour is or is not better paid or more fully employed. And while increased wages and increased cost of living may sometimes more or less neutralize one another, increased wages may, on the other hand, be accompanied and rendered even more effective by a lessened cost of living. And, finally, it should be noted that the facts as to the pecuniary cost of living at any period remain the same, whatever may be judged to be the causes of their variation—whether an alteration in the currency by which they are measured, or a change in the supply of the several commodities in relation to the demand.

4. **Bibliography.**—The most important single book on the subject is Ernst Engel's *Die Lebenskosten Belgischer Arbeiterfamilien* (1895); and among the many criticisms it has called forth reference should be made to G. Schnapper-Arndt's *Sozialstatistik* (1908). An introduction to the most recent writings on the question is furnished by the article by S. Bauer on 'Konsumption nach Sozialklassen,' in the *Handwörterbuch der Staatswissenschaften* (3rd ed., 1910). The literature in the English language is exceedingly scanty. Besides the Memoranda in the English official reports, made use of above, attention may be called to R. Mayo-Smith's *Statistics and Economics*, and to his article on 'Workmen's Budgets' in Palgrave's *Dictionary of Political Economy* (both 1899); and to the article on 'Cost of Living of the Working Classes' in the *Edinburgh Review* for January 1911.

W. J. A.

Dangerous Trades. See FACTORY LAW.
Decasualization of Labour. See LABOUR EXCHANGES.
Detention Colonies. See UNEMPLOYMENT.
Diseases, Industrial. See PHYSICAL CONDITIONS, ETC.

EDUCATION AND INDUSTRY.

1. *Elementary Education.*
2. *Higher Education.*
   - (1.) *Whole-time Attendance.* (*a*) *The Secondary School.* (*b*) *The Trade School.* (*c*) *Technical Colleges, etc.* (*d*) *The University.*
   - (2.) *Part-time Attendance.* (*a*) *The Evening School.* (*b*) *Technical Instruction.*
3. *The Demands of Industry.*
4. *Bibliography.*

1. Elementary Education.—In this country no systematized scheme determines the relation of Education to Industry. A hurried and superficial examination might even fail to detect any relation at all: Education stands in one place, Industry in another, while a huge gulf apparently separates the two. A more careful examination, however, serves to reveal numerous bridges spanning the gulf. But each bridge seems in a sense accidental, hurriedly flung together to meet some obvious want, complete in itself, and constructed without respect to the other already existing bridges. Yet, even here, order is not altogether absent: a plan—not, indeed, deliberately designed, but called into being by a vague but insistent consciousness of need—has determined the main lines of the system of bridges.

Industry needs intelligence, and varying degrees of intelligence. What is commonly called general education, whether supplied by the Elementary School, the Secondary School, or the University, is intended to supply this varying intelligence. Industry needs specialized skill and knowledge, specifically adapted to each of its numberless forms. Education, and in particular Technical Education, endeavours to provide this specialized skill and knowledge. Finally, Industry, for its efficient development, needs a succession of recruits, carefully sorted according to the ability of the recruit and the requirement of the particular industry. The Juvenile section of the Labour Exchange—that meeting-place of Education, with its detailed knowledge of each juvenile, and of Industry, with its detailed knowledge of each trade—is striving to create the necessary sorting-house.

Under the pressure of these needs have been developed—unsystematically, no doubt, but not altogether inefficiently—the relations that connect Education and Industry. We may study these relations in two ways: either we may describe the educational system, and inquire how it dovetails into the industrial organization; or we may start with the industrial organization, and see whether due provision is made in the educational system for the supply and training of the various grades of workers required.

Speaking broadly, full-time attendance at school is compulsory on all children between the ages of five and twelve. Those above the age of twelve can, under conditions, obtain partial exemption from attendance—the notorious half-time system. Those over thirteen can, under conditions, obtain complete exemption from attendance. For the ordinary child compulsion ceases when the age of fourteen is reached. Of late years the conditions, whether for whole or part-time exemptions, have been made increasingly difficult to fulfil, and the majority of children now remain at school until they attain the age of fourteen. . A mere handful continue attendance after fourteen, though the law permits them to attend school until the close of the school year during which they become fifteen years old.

Of late years Elementary Education has made great advances, and certain clearly defined effects have become apparent. Taken as a whole, when they leave school, the children are regular in their habits of attendance, cheerfully obedient to their teachers, and alertly intelligent. The increasing attention devoted to physical training, to medical inspection and treatment, and to the supply of meals to the ill-fed, is already showing fruits in the improved physique of the scholars. Regularity, obedience, and intelligence—these are essential qualities required in all forms of life. And when to these qualities we can add good health, we may fairly claim that our Elementary Education has furnished a solid foundation on which to rear later the fabric of industrial training.

We ought not to look for or to desire any specialized training in an education which for the vast majority ends on the fourteenth birthday. There can be no talk of teaching a trade to children of such tender years. On the other hand, it is a fact that for a certain class of occupation the Elementary Schools are supplying a complete training. The errand boy needs to be regular, obedient, and intelligent, and needs to be nothing more. As he leaves school every boy is a ready-made errand boy. Industry has realized the fact, and adapted its ways in order to make a rapidly increasing use of this easily got material. There is here no cause for satisfaction. There is no future for the errand boy. He receives no training at his work, and speedily rubs off the effects of his education. At the age of seventeen or eighteen he finds himself discharged, without a trade, and too often without the power to learn one. The relation of Industry to Education, of which the errand boy furnishes the most signal but by no means the sole example, must be condemned. We have Industry, for its own immediate gain and to its own later loss, exploiting Education. In the industrial organization this phenomenal use of boy labour represents not a healthy development, but a diseased and parasitic excrescence.

The Elementary School cannot prepare for a trade. On the other hand, it serves as an efficient sorting-house, wherein special ability or aptitude can be discovered and afforded special opportunity for development. This sorting process is continually going on. There is first a sorting out of pupils within the Elementary School system; various types of schools are established to meet the needs of various types of mind. The type most intimately related to Industry is the *Central, Higher Elementary*, or *Higher Grade School*—these being all names for much the same thing. Somewhere about the age of eleven, children likely to succeed in one or other of the skilled trades are selected and gathered into Central Schools. These schools are more elaborately equipped than the ordinary school. There are, in general, a laboratory and an art room. In particular, rooms for practical work, whether woodwork or metal-work, are provided. A distinctive bias is given to the curriculum of each school; the various subjects of instruction are selected and taught with a bearing in the direction of a certain group of trades. The schools do not pretend to teach a trade, but incline and prepare the scholars to enter a trade on leaving. There are various types of Central Schools according as they specialize in woodwork or metal-work. There is also a commercial type; but it is by no means clear that this type is permanent, and it will probably be discontinued, and its place taken by the Secondary School. The Central Schools in general provide a four years' course, and occasionally small scholarships are awarded, with the object of inducing parents to keep their children at school beyond the age of compulsory attendance.

Next there is a sorting out of pupils for removal either to the Secondary or to the Trade School.

2. **Higher Education.**—As defined by the law, Higher Education embraces all forms of education other than that provided in the Elementary Schools, or in the Special Schools for the physically, mentally, or morally defective. It may be divided, broadly speaking, into two classes, according as the pupil devotes his whole time or only part of his time to the continuance of his education.

(1.) *Whole-time Attendance.*—Under whole-time attendance are included all who are not earning their own living, but devoting their whole time to continued education. Schools and institutions attended by such persons are of various kinds, and in what follows I have endeavoured to describe their more prominent characteristics. Exact classification is not possible, and, though there are broad differences in aim, many institutions might fairly be included in more than one class.

(*a*) *The Secondary School.*—This institution affords opportunities of continued education up to the age of eighteen or nineteen. It is fed by children whose parents pay fees. It is also fed by children who are given free places; grant-earning schools must now reserve for such children at least a quarter of their places. And, lastly, it is fed by children coming from the Elementary Schools with scholarships. These scholarships are usually awarded between the ages of eleven and twelve, though not infrequently scholarships may be obtained at a later age; they include a free place, and in general a maintenance grant, whose amount varies with the income of the parent and the age of the scholar. The majority of the pupils leave about the age of sixteen, but a considerable and an increasing number remain until eighteen or nineteen.

The object of a Secondary School is to provide a good general education. In some the education is mainly literary, in others scientific; but in all cases one or more foreign languages are included in the curriculum. Recently there has been a development in the direction of establishing a more direct connection with the business life of the community. In some cases, to meet a steadily growing demand, elementary training in commerce has been provided during the last year of the course. In others, the school, or a section of the school, has been designed to supply a commercial training of an advanced character. Occasionally there has been a tendency to give prominence to industrial training, but such a school is best included in another class.

(*b*) *The Trade School.*—This institution provides a two or three years' course of instruction for pupils entering at the age of thirteen or fourteen. In general they come from the Elementary School, sometimes with scholarships, and sometimes as fee-paying students.

The object of the Trade School is clearly defined, and its relation to Industry intimate and carefully designed. It aims at giving a thorough all-round grounding in some particular trade, with the object of making the pupils intelligent workmen. It is intended to be a partial substitute for the old system of indentured apprenticeship, now obsolescent. In order to secure intelligence, provision is made for the student to continue his general education. In order to prepare him for industry, specific training is given on workshop lines in some particular trade. Not infrequently an advisory committee of employers visits the school and supervises the practical instruction. Furniture and cabinet-making, engineering, building, wood-carving, silversmithing, carriage-making, and tailoring are among the subjects taught in Trade Schools for boys. For girls instruction is given in cookery, corset-making, dressmaking, laundry-work, millinery, photography, upholstery, waistcoat-making, and other trades. It is hoped that from these schools may come the more highly trained skilled workers of the future.

(*c*) *Technical Colleges, etc.*—These institutions may be looked on as a more advanced form of Trade School. If the latter is regarded as the training-ground of the highest type of skilled workmen, the former aims at supplying the technical instruction required by those destined to fill important positions in the industrial world. Science, in its higher branches, as applied to industry—this in general represents the object of these institutions.

(*d*) *The University.*—Industry is now beginning to realize the need of securing for its service the best-trained brains of the country, and is tending more and more to go to the Universities in search of recruits. On the other hand, the Universities are recognizing their responsibilities in this direction, and are attempting to fulfil them by a rapid development of their technological work. In particular, the Universities are endeavouring to make provision in its most efficient form for that kind of research destined to lead to those new inventions essential to all industrial progress.

(2.) *Part-time Attendance.* — Under part-time attendance I include all forms of the continued education of those already engaged in earning their living, whether the instruction is given during the day or in the evening.

(*a*) *The Evening School.*—This term is usually applied to classes held during the evening in the buildings of the Elementary Schools. This institution provides an opportunity for those engaged in work during the day to continue their general education, to obtain elementary instruction in art and science, to secure the advantages of an elementary and an advanced training in commerce. Instruction in dressmaking, cookery, woodwork, and carving finds a place, but the necessary limitations of equipment prevent any large developments in this direction. Of the Evening Schools, the Commercial Centres are the most successful, if we look merely to the direct results of the teaching on the industrial prospects of the student. But it would be foolish to blind ourselves to the great gain that accrues to Industry in the increased intelligence of those who are enabled, with the aid of the Evening School, to continue their general education.

(*b*) *Technical Instruction.*—The more advanced technical instruction, requiring for its efficiency costly machinery and other expensive equipment, is provided in the Technical Institute and Polytechnic. These places, apart from the fact that they are in general the home of the Trade School and Technical College, supply the immense demand that now exists for part-time instruction. The advantage of this part-time instruction lies in the fact that the student is already practising the trade in addition to attending classes. The training of the workshop and the training of the school go on side by side, and there exists here a peculiarly intimate relation between Education and Industry whose like is found nowhere else. Further, the representatives of Organized Labour have always looked with favour on these part-time classes, because the students have already entered the trade, and the question of unduly multiplying the recruits does not, therefore, arise. With the whole-time Trade School the case is different, and these institutions cannot be rapidly increased without encountering the serious opposition of Trade Unionism. The disadvantage of the part-time instruction lies in the fact that the students attend the institution more or less wearied out by a long day's work. The vast majority of the classes are held in the evening. There are, however, exceptions, and the part-time Day School is making steady progress. Certain employers allow the juveniles they employ 'time off' to attend classes held during working hours, with results altogether favourable. But 'time off' is inconvenient to the employer, and there will be no large development in this direction until Parliament steps in and makes 'time off' compulsory. For such legislative action there are precedents on the Continent—Munich in particular has gradually introduced the practice, and employers have welcomed the reform, and seen in the improved efficiency of their workmen a full return for the trouble and expense involved.

Of the nature of the instruction given, usually in the evening, at these part-time classes, it can best be said that variety, to meet the innumerable demands, is the chief characteristic. Hardly a trade or industry of importance exists without there being provided in some Institute facilities for obtaining in all its branches a training at once practical and theoretical. The learner in the building trade anxious to supplement the training of the workshop, the premium apprentice in an engineering firm eager to widen his knowledge of science and mathematics, the young man employed during the day, but devoting his evenings to preparing for a diploma in chemistry, a university degree, a doctorate in science—all these will find appropriate provision made for the instruction they require. In general, it may be said of the majority of Education Authorities that, while they may frequently grudge money for purposes of general education, they are willing to spend liberally on all forms of technical instruction; if anything, the supply outruns, or at any rate anticipates, the demand.

3. **The Demands of Industry.**—So far, I have been concerned to show, by a survey of the educational system, what Education does in the service of Industry. As already mentioned, we may approach the question in a different way, and inquire what are the demands of Industry in regard to its supply of labour of all grades, and how far Education meets these demands.

First, Industry takes in its recruits at different ages, and requires of them very different qualifications.

Variety, whether in curricula or in the length of the school life, must be the aim of the educational system. Looking at the Elementary School, the Central School, the Secondary School, the Trade School, the Technical College, the University, each in its diverse developments, we can claim the existence of variety, and an almost unlimited willingness to vary.

Secondly, Industry not only asks a variety of training for its recruits, but also requires that the recruits should be specially selected for each type of training. There must be no obstacle in the way of access to the most appropriate form of education. Poverty is the great obstacle in the path of the clever child, and it must be remembered that no class in the community can claim a monopoly of intelligence. The scholarship system removes, in part, the obstacle; but there are degrees of poverty, presenting obstacles which no scholarship system can ever hope to surmount.

Thirdly, Industry, in its selection of recruits, must work in close co-operation with Education. Education possesses a unique knowledge of the abilities and the aptitudes of its individual pupils. In the past Industry has made too little use of that knowledge, and too often regarded it with contempt. Signs are not wanting that the gulf which separated Industry and Education in this work of selection is rapidly filling up. There are the Juvenile Advisory Committees of the Board of Trade, consisting of representatives of the Education Authority, employers, employees, and others. Working in close touch with the schools, and dealing with juveniles up to the age of seventeen, they are in a position to put at the service of any employer the whole knowledge of the schools, and enable him to select out of all the schools the juvenile best suited for the opening offered. Already in its selection of its recruits, Industry is paying increasing attention to the Technical Institutes and Trades Schools, and occasionally consults the Appointment Boards of the University. But the gulf still remains, and Education at any rate is not to be blamed for the want of bridges.

Finally, Industry is not concerned only with recruits; those who have entered require training, and there is also promotion within the service, and for this training likewise is required. Roughly speaking, there are in Industry four grades of adults—the unskilled labourer, the skilled workman, the foreman, and the manager.

Industry requires its unskilled labourers to be well conducted, intelligent, and adaptable. Education may fairly claim that these qualities are displayed by the vast majority of children as they leave school. Industry complains that to a large extent these qualities have disappeared by the time the children have become adults; but Industry has only itself to blame for this unfortunate fact. No system of training could withstand the assault made upon it by the treatment of juveniles at the hands of Industry. There is a lack of discipline, a total absence of training and educational influence; recruits to the army of unskilled labour are treated as earners and producers, and not as learners, and are regarded merely as a cheap and convenient form of labour. And even so they cannot be regarded as recruits, seeing that they are discharged before manhood is reached, and then drift into the morass of unintelligent labour for which no one has any particular use. Education in its Evening Schools does what it can, but only the relatively few are able and willing to attend. At present it must be admitted that no adequate training is provided to secure the intelligent unskilled labourer; nor will this be possible until 'time off' to attend classes is made compulsory.

In its skilled workmen and foremen Industry asks for the same qualities, but makes larger demands on the intelligence, and requires some specialized skill. The foremen must possess an 'all-round' knowledge of the trade. If foremen are recruited from workmen, the latter must enjoy the opportunities of an 'all-round' training. In consequence, an 'all-round' training is desirable for all. Under conditions of modern industry, intelligence and adaptability are as important as, probably more important than, manual skill. The Central School, the Trade School, part-time day classes, where the employers allow 'time off,' and the evening classes of the Technical Institute, all endeavour to make provision, in varying degrees, for the adequate training of the skilled workmen and foremen. It is to be regretted that the bulk of the instruction open to such persons can only, in practice, be obtained in the evening. It is, however, difficult to see how there can be any large extension of part-time classes without legislation. At present it must be admitted that there do not exist adequate facilities for the proper training of the skilled workmen and foremen of the future; nor will these adequate facilities exist until 'time off' to attend classes is made compulsory. Indeed, it is to this new compulsory system of 'time off' that we must look for the substitute of the old Apprenticeship system.

For its managers and directors of large undertakings Industry demands high qualifications, and in the more important positions the very highest scientific attainments. For those recruited from the ranks of skilled hands Education provides the more advanced evening classes in the Technical Institutes and Universities; and there is the Technical College in the case of those who are able to withdraw temporarily from the workshop in order to devote their whole time to study. It is probable, however, that in the future few persons who end their general education in the Elementary Schools will be found fitted to rise to the post of managers.

It is becoming increasingly apparent that the manager of the future must enjoy the advantages of the best education the country can provide. To the Secondary Schools, leading to the Technical College and the Technological Universities, we must look for the supply of this highly-trained intelligence. The provision is being made ; it is for Industry to recognize more clearly the need, and to ask of its recruits that training which Education is already offering in some degree, and only too willing to extend if the demand justifies the supply.

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Education, Elementary. See EDUCATION AND INDUSTRY.

Education, Secondary. See EDUCATION AND INDUSTRY.

Education, Technical. See EDUCATION AND INDUSTRY.

Education, University. See EDUCATION AND INDUSTRY.

Eight-Hours' Day. See HOURS OF LABOUR.

Electrical Power. See INDUSTRIALISM, HISTORY OF.

EMIGRATION.

1. *Emigration Overseas :—*
  - *British Emigrants and their Destinations.*
  - *Proportion of English, Scottish, and Irish Emigrants.*
  - *Deportation of Emigrants.*
  - *Sailing Accommodation and the Reception and Distribution of Emigrants.*
2. *Agencies and Organizations for Emigration.*
3. *Migration from Urban and Rural Districts.*
4. *Rural Depopulation and Remedial Measures.*

1. Emigration Overseas.—The British emigrant is one of the prime factors of Empire. No field of romance equals the story of the New World pioneers. Their departure is often darkened by anxious cares, and in earlier days was embittered by persecution; but the New World gives hope and opportunity. The emigrant's humble 'shack' has proved a safe foundation for hamlet and town and the proud cities of a New World. The peaceful triumphs of patient toil deserve recognition. Warships, munitions, troops, and valour assume importance in proportion to the garnered fruits of labour.

British Emigrants and their Destinations.—It is gratifying to know that a growing proportion of the emigrants leaving British ports are registered for ports within our own dominions. For reasons given later, the returns are not complete, but the figures available are so emphatic that there can be no doubt at all of the growing popularity of our Colonies. In the ten years 1891–1900, 28 per cent. of the total number of British emigrants sailing from home ports were landing upon British territory, 72 per cent. going to foreign ports. In 1909, 59 per cent. went to British ports, and 41 per cent. to foreign countries; while in 1910, 68 per cent. went to British possessions.

The actual figures for 1910 were as follows :—

To British North America	115,681
To Australia and New Zealand	32,725
To British South Africa	8,314
To the United States	73,569
To other destinations	3,420
Total	233,709

In estimating the volume of emigration from the British Isles, it must be remembered that only approximate returns are available. Statutory returns include only the ports of embarkation and landing, but a considerable number of emigrants for Canada land at ports in the United States; others, bound for the United States, land at Canadian ports; while a considerable body of British emigrants sail from Continental ports. For these no statutory returns are available. The method adopted for the purposes of official emigration returns is to subtract the total of inward-bound passengers from the total of outward-bound passengers, leaving out of count the movements of British troops and the classes mentioned above.

It will be seen from the following table that only once during the last ten years has the total balance of outward sailings to non-European ports exceeded the figures for the year 1910.

Balance of Outward British Passengers, Sailing from British Ports.

1901	72,016
1902	101,547
1903	147,036
1904	126,854
1905	139,365
1906	194,671
1907	235,092
1908	91,156
1909	139,693
1910	233,709

The year 1910 was remarkable for booming trade returns and a marked reduction in unemployment throughout Great Britain. It would, therefore, appear that many persons availed themselves of their increased earnings to seek the wide and hopeful prospects of a new land. There can be no doubt that the growing uncertainty of employment to large numbers of workers in this country is a very strong incentive to emigration.

This view is supported by the return for *third-class* passengers. Comparing 1910 with 1909, there was an increase of nearly 100,000 third-class passengers, or 59 per cent. of the total for 1910; the proportions for 1909 and 1908 being 56·5 and 50 per cent. respectively. Taking the occupations of the 1910 emigrants, it will be seen that further evidence of the above view is forthcoming.

Total British Emigrant Adult Males for the Year 1910.

Agricultural	24,174
Commercial and professional	20,856
Skilled trades	48,361
Labourers	54,765
Miscellaneous, or not stated	56,162*
Total	204,318

Total British Emigrant Adult Females for the Year 1910.

Domestic and other service	31,526
Dressmakers, and other trades	5,002
Teachers, clerks, and professions	2,769
No stated occupation	97,402*
Total	136,699

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* Note.—Many of these would be children, as the Merchant Shipping Act, 1894, Part III., reckons all persons of twelve years of age and upwards as adults.

Proportion of English, Scottish, and Irish Emigrants.—A study of the table given opposite is instructive in

Year.	Total of British Subjects.	ENGLISH.		SCOTTISH.		IRISH.	
		Number.	Percentage of Total.	Number.	Percentage of Total.	Number.	Percentage of Total.
1900	168,825	102,488	61	20,472	12	45,905	27
1901	171,715	111,585	65	20,920	12	39,210	23
1902	205,662	137,121	67	26,285	13	42,256	20
1903	259,950	177,581	68	36,801	14	45,568	18
1904	271,435	175,733	65	37,445	14	58,257	21
1905	262,077	170,408	65	41,510	16	50,159	19
1906	325,137	219,765	68	53,162	16	52,210	16
1907	395,680	265,229	67	66,355	17	64,096	16
1908*	263,199	172,982	66	42,273	16	38,352	15
1909*	288,761	180,997	63	52,884	18	44,069	15
1910*	397,848	249,804	63	79,784	20	51,284	13

* For the years 1908, 1909, and 1910 the undermentioned particulars were obtained :—

Welsh Passengers—

1908	4,004
1909	4,540
1910	5,785

relation to both industrial and rural problems. Much, for instance, has been said respecting the depopulation of certain rural areas in Scotland for the sake of sport. The remarkable increase of Scottish emigrants during the last ten years appears to bear this out. On the other hand, there does not appear to be any appreciable reduction in the volume of Irish emigrants coincident with the recent land reforms in that country; while the volume of English passengers for 1910 was the second highest on record, although trade was abnormally good and agriculture said to be reviving.

Deportation of Emigrants.—There can be no doubt (and it is officially admitted by the Canadian authorities) that the type of persons in Great Britain desiring to emigrate has much improved during the last ten years; but in spite of this it will be seen by the tables opposite that the United States and Colonial authorities have deported a steadily increasing number of undesirable immigrants. The explanation appears to be that a much higher standard of physique, morale, and prospective economic independence is demanded by the various authorities, the main reasons for deportation being three—paupers (or likely to become a public charge), disease, and idiocy or insanity.

It may fairly be assumed that the outflowing stream of emigrants from Great Britain and Ireland represents the most virile and progressive elements of our rural and industrial population—a very happy consideration for the New World, but providing much matter for careful inquiry at home.

Sailing Accommodation and the Reception and Distribution of Emigrants.—The accommodation and food provided for emigrants aboard ship have vastly improved of late years, and leave little to be desired. A great change has come, too, in the more careful oversight of emigrant passengers on the part of the ships' officers; also from the largely increased custom

Causes which lead to the Rejection of Immigrants of British Nationality by United States Authorities.

Causes.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Violation of Contract Labour Law	3	18	100	43	16	20	30	21	8	21
Paupers, or likely to become a public charge . . .	114	91	124	248	253	286	206	214	264	569
Disease	28	37	37	28	27	33	23	20	41	39
Idiocy or insanity . . .	28	22	26	42	64	97	112	113	123	98
Convicts	1	2	1	1	6	1	4	15	7	6
Immoral	—	—	—	—	—	—	—	4	18	18
Returned with rejected emigrants *	6	2	16	5	5	6	6	20	22	11
Other causes	—	—	—	—	3	3	—	6	—	3
Not stated	—	—	1	1	—	—	—	—	—	—
Total	180	172	305	368	374	446	381	413	483	765

* Families of rejected persons.

CAUSES WHICH LEAD TO THE REJECTION OF IMMIGRANTS

Cause.	1901.	1902.	1903.
Sent back by			
Violation of Contract Labour Law	..	..	..
Paupers, or likely to become a public charge	5	..	8
Disease	..	..	9
Idiocy or insanity	1	2	4
Convicts	..	..	..
Immoral	..	..	3
Inebriates	..	..	..
Returned with rejected emigrants*	..	..	..
Other causes	..	..	..
Not stated	..	..	..
Total	6	2	24
Sent back by			
Paupers, or likely to become a public charge	..	..	3
Idiocy or insanity	..	2	1
Convicts	..	..	..
Immoral	..	..	..
Other causes	..	..	..
Total	..	2	4
Sent back by			
Paupers, or likely to become a public charge	..	..	..
Idiocy or insanity	..	..	..
Total	..	..	..
Sent back by			
Disease	..	..	1
Idiocy or insanity	..	..	..
Total	..	..	1

* Families of rejected persons.

of British Nationality by Colonial Authorities.

1904.	1905.	1906.	1907.	1908.	1909.	1910.
Canadian Authorities.						
..	..	..	..	..	4	7
20	28	69	153	663	470	365
9	9	16	24	43	35	53
5	13	24	89	100	86	107
..	1	2	4	32	29	28
..	..	..	10	5	14	16
..	..	..	..	29	8	9
2	1	1	9	5	16	19
..	..	..	..	..	..	3
..	..	2	1	1	1	1
36	52	114	290	878	663	608
South African Authorities.						
2	6	8	1	5	8	9
1	..	..	..	1	..	..
..	..	..	2	..	..	1
..	..	..	..	..	1	..
..	..	..	..	..	2	..
3	6	8	3	6	11	10
Australian Authorities.						
..	..	..	..	..	..	1
..	..	..	..	..	..	2
..	..	..	..	..	..	3
New Zealand Authorities.						
..	..	2	1	1	1	1
..	..	..	..	..	3	2
..	..	2	1	1	4	3

adopted by many agencies of arranging conducted parties travelling under the care of suitable conductors.

The reception and distribution of emigrants has become a highly organized department of the Colonial Immigration Administration.

In Canada provision is made for receiving and housing immigrants until they are forwarded to their destination for employment.

In Australia there is no organized system of reception and housing, except in Western Australia and Queensland. At every port there is an Immigration Office, or a Tourist and Intelligence Bureau, and in the capital city of each state there is a Labour Bureau.

In Western Australia only the State-assisted immigrants are housed. The nominated emigrants are not allowed the use of the home, but are expected to proceed straight to their friends.

In Queensland practically all immigrants from Great Britain may make use of the Receiving Home, if necessary, for a short period.

In New South Wales, only those immigrants advised by the Agent-General in London are met and dealt with.

The Intelligence Department is doing good work, and although it does not guarantee assistance to any but rural workers, in practice artisans and others get valuable advice, travelling expenses on loan, etc.

In Victoria a well-organized Intelligence Department has been recently established, where any immigrant can obtain sound advice.

The great scarcity of housing accommodation is one of the most trying initial difficulties of the emigrant family.

Nearly all male adult immigrants find it wise to join a Trades Union, but sometimes election is not easily secured.

It is necessary for families to have from £2 to £3 per head landing money to cover incidentals to the commencement of wage-earning.

2. **Agencies and Organizations for Emigration.**—These are mainly of three types—'The Ordinary Business Agency,' 'The Philanthropic Agency,' and the 'Municipal Agency.' Poor Law Guardians have emigrated a comparatively small number (mostly children).

The first named are scattered throughout the cities and towns of Great Britain, and are run on purely business lines for profit.

The philanthropic agencies have most of them been called into being in times of industrial depression, and in better times have found abundant patriotic reasons for continuing their work. We can mention only a few examples here.

One of the oldest of these—*The East End Emigration Fund*—works in close association with the Charity Organization Society. It operates mainly within the Metropolitan Police District, which covers a radius of some fifteen miles from Charing Cross. During the thirty years of the Society's work, 23,598 persons have been assisted to emigrate. Monetary aid is granted only to British subjects emigrating to British Colonies.

The Society pays special attention to the emigration of families, and conducts its business with scrupulous care.

The Self-help Emigration Society was founded in 1884, mainly as the result of public interest aroused by a pamphlet (*The Bitter Cry of Outcast London*) which gave the results of an inquiry into the condition of the London unemployed. The Society has extended its operations to the whole of the United Kingdom.

Emigrants sent out by this Society may be divided into three classes :—

(1.) People able to pay their fare, seeking advice and Colonial introductions.

(2.) People able to find part of the cost of their emigration, the Society providing the balance.

(3.) Those for whom public or charitable bodies have provided the cost of emigration, and who desire to avail themselves of the facilities offered by this Society.

From the commencement of the Society some 11,000 persons have been emigrated, Canada taking by far the major part.

The Salvation Army has carried on organized emigration work since 1904, and is now recognized as an important emigration organization, with agencies in London, Glasgow, Liverpool, and Bristol.

The Department is run on business lines, but all profits are transferred to a loan fund, for the benefit of selected emigrants needing monetary assistance. A professional audit of accounts is made, and is published yearly. Operations are conducted without reference to creed. Of a consecutive 9,000 passengers, 15 per cent. only were found to be Salvationists.

Of the applications received at the London office, about 56 per cent. came from towns with populations exceeding 50,000; 24 per cent. from towns where the population exceeds 2,000; and 20 per cent. from villages or hamlets.

The world-wide organization of the Army provides capable and sympathetic agents everywhere, who meet, direct, and advise emigrants when they reach the new country.

The work of the Army has been chiefly directed to Canada, some 60,000 persons being settled there during the last eight years. The Army guarantees work to its selected emigrants upon arrival in Canada, and provides insurance against unemployment if desired. A very limited number of carefully selected men have been emigrated after a period of discipline and training at the Hadleigh Salvation Army Colony, Essex.

Emigration of Children.—Nearly all the great philanthropic institutions for unfortunate children carry on extensive emigration work. As an instance, it will be sufficient to mention one, probably the largest of these.

Dr. Barnardo's Homes, established some forty-six years ago, have become known throughout the world, and some 24,000 boys and girls have gone forth from them to every part of the globe. The great majority are settled in Canada. A few of the emigrants leave at the age of from fifteen to seventeen years, and go straight to situations prepared for them ; but the majority go out quite young, from eight years upwards. These are boarded out, under careful supervision, in ones or twos, at selected homesteads in Ontario. The Canadian work is directed from four centres, the chief office being 50 and 52 Peter Street, Toronto. This is the distributing home for boys, the main distributing home for girls being at Peterborough, Ontario. A large proportion of these children ultimately take up agricultural work.

Mr. G. Bogue Smart the Canadian Inspector of British Immigrant Children and Receiving Homes, states 'that there have been fewer complaints concerning the character and industry of this class of newcomer than of any other.'

Further, Mr. Smart says, 'that from general inquiry and personal experience I can say that at least 75 per cent. follow agriculture.'

Poor Law Children.—From 1907 to 1911, 4,297 persons were emigrated by Poor Law Guardians in England and Wales, at a cost of £49,804. Nearly the whole of these persons were children.

Municipal Emigration. — Under the Unemployed Workmen Act, 1905, the *Central* (*Unemployed*) *Body for London* are empowered to assist unemployed persons by emigration. The funds for the expenses of emigration are defrayed from out of contributions demanded from the whole of the Borough Councils in the Metropolitan area. These contributions may not exceed in any one year a ½d. in the £, or such higher rate, not to exceed 1d., as the Local Government Board may approve. A rate of a ½d. in the £ produces about £92,000 per annum.

During the past five years nearly 10,000 persons have been assisted to emigrate: about 8,000 persons have been sent to Canada, and about 2,000 persons to Australia and New Zealand.

The cost for transport, outfit, and landing-money being about £82,500, £32,000 of this sum was advanced by way of loan, under guarantee or promissory note.

More than 1,000 of the male adult emigrants had received a course of training in agriculture before sailing at the training farms owned and administered by the central body at Hollesley Bay, Suffolk.

Emigration to Canada has been mainly conducted in conjunction with the Canadian Government Immigration Service.

The Immigration policy of the Australian States being restricted to the introduction of experienced agriculturists, relations were established with the British Immigration League at Sydney. The League has received and placed in work a large number of emigrants through their various branches.

In addition to the organizations and agencies of the classes described, the British Colonies have themselves, through their official representatives in the United Kingdom, organized an elaborate system of Press advertisement, lectures, and Intelligence Departments; while all assisted emigrants are carefully scrutinized by their own officials before sailing.

The Emigration of certain Industries en bloc.—The advantages arising from favourable natural conditions possessed by this country in relation to certain industries undoubtedly contributed to their initial prosperity. The immense and rapid changes in methods of production have tended to neutralize these natural advantages, but the enormous variety of climate, mineral deposits, forests, etc., within the British Empire gives us a second chance of industrial pre-eminence. It is therefore urgent that certain industries should consider the possibility of restoring their lost natural advantages by setting up their productive centres in some more favourable part of the Empire.

What can be done in this way is illustrated by the changes in the manufacture of paper. Wood pulp has largely superseded rags as the raw material for certain qualities of paper. The product of the forest has displaced the by-product of population. Recognizing this, the natural advantage of our large population was restored by utilizing on the spot the vast forests of Canada and Newfoundland.

The proud consciousness of growing populations and ever-widening areas of fruitful land in our Colonies is chastened by the shrinkage of our rural population in the United Kingdom and Ireland. But there is at last every sign that these rural problems are touching the consciousness and rousing the determination of responsible statesmen.

3. **Migration from Urban and Rural Districts.**—At the beginning of the eighteenth century about one-sixth of the population was contained in the families of the yeomen of England, who tilled their own land. At its close they had practically disappeared. The loss of the land was accompanied by more unstable industrial conditions. The advent of the industrial revolution had broken up the limited but well-organized industrial life of the old hand-workers. The revolution was complete, but the economic gospel of the period was faulty. The Trades Union movement is largely the story of an attempt, on the part of labour, to make good the faulty economic gospel of the period.

The industrial workers soon realized the necessity of defence by organization; while from time to time evidence is forthcoming of a growing national consciousness of the necessity to reconstruct rural life on modern lines. As far back as 1832 we have the Workmen's Allotment Act, extended in 1882. In 1887, and again in 1890, there was further allotments legislation. These were followed by the Small Holdings Act of 1892 and 1907. These Acts are indicative of the realized necessity to attempt the reconstruction of rural life.

4. **Rural Depopulation and Remedial Measures.**—Two things emerge from a survey of the industrial and social conditions of Great Britain from the eighteenth century down to the present—(1) the necessity to adjust our industrial system by the scientific organization of labour; and (2) the urgent necessity to revive and reconstruct the rural communities.

We have here to deal with the latter, and especially with reference to the possibility of returning part of the surplus town population to rural occupations. It is doubtful whether we have any adequate appreciation of the vital relationship of rural life to our national morale and physique, while it is increasingly clear that under certain eventualities the nation may in a short, sharp time of crisis have to depend upon a plentiful supply of home-grown produce.

The retention of a much larger proportion of country-bred persons in rural life is essential to the successful revival of rural life. At the same time, it must be good for both town and country if a part of the surplus population of the city could be transferred to rural life and occupations, with a prospect of economic success.

There is available a considerable body of experience covering the initial stages of such an exodus, but not sufficient data to justify a positive declaration either of success or failure.

The cry of 'Back to the Land' has too often come from the lips of men who, familiar with the acute problems of city life, are entirely ignorant of the essential features of practical agriculture. To give men temporary work on the land in times of distress is a very easy matter; to train men for settlement on the land is, under proper conditions, comparatively easy; but to devise afterwards a fair opportunity and prospect of economic independence brings us face to face with many difficulties.

With two or three exceptions, the experiments carried on since 1891 have gone little beyond the purpose of a temporary job, or remedial employment for moral, physical, or industrial defect. Apart from these exceptions, the experience gained is of little value in considering the possibility of establishing groups of town-bred men upon small holdings upon a self-supporting basis. No one with a practical knowledge of the subject would suggest the possibility of so establishing any of the defective classes.

The necessary qualifications of a townsman intended for small holdings may be briefly stated :—

(1.) Under thirty-five years of age.

(2.) Physically sound and strong.

(3.) Willing and hard worker.

(4.) If married, both man and wife suitable, and keen to live a country life.

(5.) Good character.

After careful selection on the above lines, it would be essential to provide—

(*a*) Efficient agricultural and horticultural training.

(*b*) Organization and co-operation.

(*c*) Cheap capital.

(*d*) Land carefully chosen for suitability and situation, and specially prepared before occupation.

(*e*) Each holding should not be less than ten acres.

(*f*) After training, the probationary occupation of a small holding for a period not to exceed three years.

Three experiments are available for consideration where only selected men have been dealt with :—

(1.) Hollesley Bay Training Colony, Suffolk.

(2.) The Mayland, Nipsell's Estate, Small Holdings, Essex.

(3.) The Boxted (Salvation Army) Small Holdings, Essex.

Hollesley Bay Training Colony is owned and administered by the London Central (Unemployed) Body. The estate, of 1,300 acres, is, from the training standpoint, probably the finest in the country. Every kind of ordinary four course and catch cropping is carried on. There are extensive marshes for dairy and fat stock. The land is ideal for flock purposes, and a valuable pedigree flock of Suffolks is established. Pigs are bred in large numbers. Horse-breeding is carried on, and there is an extensive poultry farm.

About 200 acres of fruit have been planted, including nearly all hard and soft varieties. These fruit trees and bush fruit are raised in the home nurseries. Bee-keeping is carried on extensively. There are students' classes, with lectures in all kinds of farm and garden subjects.

The colony has an extensive works department, with carpenters', joiners', wheelwrights', blacksmiths', farriers, plumbers', and painters' shops. Milling, timber-sawing, and water-pumping are carried on by power. Brick-making with cement and sand is carried on.

The works department has erected twenty-seven new cottages; constructed a river dock, a swimming bath, extensive ranges of greenhouses, three miles of tramway track, a water service and tower; and is responsible for estate upkeep and repairs of every kind.

The main buildings, formerly an agricultural college, contain sleeping and domestic accommodation for 350 men, with well-lighted classrooms for educational purposes. The selection of men and families for training has, on the whole, been good.

The equipment of the colony for training purposes is complete. Upwards of 1,000 men (representing some 4,000 persons) have been trained and sent to agricultural work in British Colonies. The settlement of trained men on the land in this country has been ruthlessly frustrated by the Government Department responsible under the Unemployed Workmen's Act of 1905. This Department refused to sanction either the establishment of an experimental group of small holdings on the Hollesley Bay estate, or the purchase of other contiguous land for this purpose. Thus the most important section of this valuable experimental work was swept away.

It appears this disastrous blow was not anticipated until after a number of men had been selected and entered upon training, and the erection of a group of homestead cottages had commenced. The training of these men was continued, and they and their families now occupy the homestead cottages.

The management, however, are compelled by the Department to pay these trained men, and treat them as ordinary garden labourers.

Through no fault of the central body, what must be considered its most important purpose has for the present suffered defeat. Nevertheless, valuable experience has been gained, and it is clear—

(1.) That there are a considerable number of town men keen to enter upon rural occupations.

(2.) That such men have been successfully trained to do the most skilled work upon farm and garden.

(3.) That such training, including the maintenance of the family, has been accomplished at one-third of the cost of indoor Poor Law treatment.

These three things may be looked upon as a direct contribution to the particular subject under consideration.

The Mayland, Nipsell's Estate, Small Holdings.—This estate was bought by Mr. Joseph Fels. It is situated fifty miles from London. The soil is a heavy clay. Mr. Fels determined to start an experimental group of small holdings. In 1907 twenty-one holdings were laid out, of five acres each, with a cottage and outbuildings.

Method for Selection of Tenants.—(1.) Applicants must be married. (2.) They must have £100 capital. (3.) They must be fairly strong, and able to work.

The settlers came mostly from London, with a less number from the provinces. There was no probationary period or specific training, beyond the advice of the manager, in the actual working of the holdings. Co-operation was made a condition for each holder. The rentals were fixed upon a 4 per cent. basis upon the capital involved. At the end of three years nearly every holder was in debt to Mr. Fels from £30 to £130; some were absolutely hopeless and despairing. At this stage Mr. Fels generously offered to frank the debts of any who wished to go, and to give them in addition an amount equal to one-half of their original capital. About one-half of the tenants remaining at this time accepted Mr. Fels's generous offer. Of these, one or two emigrated, and the others found occupations in the country, none of them drifting back to the town.

To those who remained Mr. Fels offered their holdings rent free until Lady Day, 1911, and after that the rent was punctually paid for four successive quarters, a free discharge of all their debts to him.

Although there are some hopeful features about this scheme, it cannot be counted a success.

The causes of failure have been summarized by Mr. Fels's manager as follows:—

(1.) Land unsuitable for experiment, both as to nature and condition. (2.) Bad seasons. (3.) Failure to co-operate.

To these may be added (*a*) the method of selection, and (*b*) the lack of training and probationary period.

Only one of these probable reasons for failure lay outside the sphere of human control. The experiment therefore provides useful warnings, but need not discourage either hope or effort.

The Salvation Army Small Holdings.—These holdings are situated at Boxted, Essex. They were established under the scheme devised under the will of the late Mr. George Herring. Candidates were selected by a board of Salvation Army officers, and there was no period of preliminary training or probation imposed. The size of each holding varied from three to five acres.

The land was, in the main, suitable and well situated. The scheme had run only a short time when difficulties arose among the holders. After much patient negotiation on the part of the Army matters became acute, and notices for the termination of tenancy were issued to many of the tenants.

The Army sought to impose new conditions of tenancy, including a probationary period; but several of the tenants refused the new conditions, refused to go, and also refused to work. Eventually the Army was compelled to eject by legal process.

The scheme is now resumed under the new conditions of tenancy, some twenty-seven tenants agreeing thereto. The superintendent states that sixteen of these are town men. He gives the following reasons for the previous failures :—

(1.) Refusal to conform to regulations.

(2.) Laziness.

(3.) Lack of ability and adaptability for country life and occupations.

From our own observation we should say :—

(*a*) That the land lacked the special preparation requisite for small holdings.

(*b*) That the area of each holding was too small.

(*c*) That training and a probationary period were not arranged.

(*d*) Weather conditions were unfavourable.

As in the case of the Mayland small holdings, we think that, with one exception, these difficulties are soluble; although it must be remembered that however perfect arrangement and organization may be, there still remain the enormously important problems growing out of differentiation of temperament, character, and ability.

Garden Cities.—These may be looked upon as an attempt to restore under modern conditions the association of productive industries with rural surroundings and occupations.

Letchworth Garden City is perhaps the best example. Full provision has been made for both the limit of its boundaries and the *pro ratâ* occupation of its building acreage, thus avoiding the twin evils of extravagant aggregation of population and overcrowding within a given area.

Already several factories have been erected amid rural surroundings, and the prospect of a successful garden city, run with commercial success, is assured.

Great industrial firms, such as Messrs. Cadbury of Bournville, Messrs. Rowntree of York, and Messrs. Lever Brothers of Port Sunlight, have shown the practicability of large concerns migrating their workpeople to ideal conditions of residence and environment, with the happiest results.

Small Holdings Acts.—With the exception of a few pensioners (police and others), the effect of this legislation upon migration from town to country has been extremely small.

Boys' Country Work Society (established 1905).—This society places suitable town lads on farms with a view to their taking permanently to agricultural work, either at home or in the Colonies. The boys must be of good character, healthy, and from fourteen to eighteen years of age. They are placed on farms where they 'live in.' For the first six months they get little pay beyond board, lodging, and clothing. At the end of six months they receive wages according to the standard of the district. The boys are self-supporting from the moment they are placed.

Supervision is carried on by means of county secretaries and local visitors. Already over 500 boys have been placed, and of these about two-thirds have taken permanently to agriculture.

The society has no office. The secretary is Miss Brook Smith, 26 Cawley Road, Victoria Park Road, London, N.E. B. S.

EMPLOYERS' LIABILITY FOR COMPENSATION.

1. *The Common Law.*
2. *Lord Campbell's Act.*
3. *The Employers' Liability Act*, 1880.
4. *The Workmen's Compensation Act*, 1906.
5. *Bibliography.*

1. The Common Law.—At common law a person injured by the wilful act, negligence, or omission of another person may recover damages in an action. These damages will, as a rule, be assessed by a jury, and will be of such amount as seems to be a fair recompense for the injury done.

2. **Lord Campbell's Act.**—Under Lord Campbell's Act, 1846, where a person is killed by accident certain of his relatives may recover damages, if the person killed would, if not killed, have been entitled to damages.

Where the person thus injured or killed is a workman, and the injury or death is due to the wilful act, negligence, or omission of the employer, the employer is liable under the common law or under Lord Campbell's Act. The employer may become thus liable because the premises, plant, machinery, tackle, etc., used by him are unsafe or insufficient; or because he employs an incompetent servant whose lack of skill has caused the accident; or because the system of carrying on the work is defective or negligent.

An employer sued for damages at common law or under Lord Campbell's Act may escape liability by setting up successfully the defence of contributory negligence (see *Pollock on Torts*) or common employment (see *Priestley* v. *Fowler*, 3 M. & W. 1; *The Petrel* (1893), p. 320).

3. **The Employers' Liability Act, 1880.**—This Act gives to the injured workman (or to his relatives in the case of death) the right to damages in the following cases:—

(1.) Where the accident is caused by some defect in the condition of the ways, works, machinery, or plant connected with or used in the employer's business.

(2.) Where the accident is caused by the negligence of a fellow-servant exercising duties of superintendence.

(3.) Where the accident is caused by the workman's obedience to orders or directions issued negligently by a fellow-servant whom he is bound to obey.

(4.) Where the accident is caused by the act or omission of a fellow-servant in obedience to rules, by-laws, or particular instructions.

(5.) Where the accident is caused by the negligence of a fellow-servant who has charge or control of any signal, points, locomotive engine, or train upon a railway.

The damages recovered under the Employers' Liability Act take the form of a lump sum both in case of death and of injury. There is no provision for weekly payments. The sum which may be awarded is limited to an amount equal to three years' earnings. There is no £300 limit, as in the Workmen's Compensation Act. Notice of the accident must be given within six weeks, though failure to give notice may be excused in case of fatal accidents. The action may be commenced at any time within six months of the accident, or, where the accident is fatal, within twelve months. The defence of contributory negligence may be raised by the employer.

4. **The Workmen's Compensation Act, 1906.**—For a detailed consideration of the decided cases illustrating the principles set forth below, see Ruegg's *Employers' Liability Act and Workmen's Compensation Act.*

Persons within the Act.—The Act applies to workmen in all trades, a workman being defined in s. 13 as a person under a contract of service or apprenticeship, whether by way of manual labour, clerical work, or otherwise. Seven classes of persons are excluded from the Act (see ss. 7 (2), 9, and 13). The following have been held not to be under a contract of service—a medical officer to a Board of Guardians; a popular lecturer; a music teacher; a man appointed by a workman to act as his substitute; a taxicab driver; a contractor working himself and employing others (but a piece-worker must not be confused with a contractor); a partner or joint owner acting as an employee of the firm (but the master of a ship may be the part owner and at the same time a workman within the Act).

Personal Injury by Accident.—The workman is not entitled to compensation unless he sustains personal injury by accident arising out of and in the course of the employment (s. 1 (1)). An accident means any unlooked-for mishap or occurrence, and includes not merely something external to the workman, as the bursting of a boiler or a mine explosion, but something internal, as rupture, straining of a muscle, etc. Where the injury is caused gradually this is not an accident. Disease contracted while at work is not injury by accident, but certain industrial diseases are deemed to be accidents (s. 8, Schedule III., and Home Office

Orders). Nervous shock through seeing an accident may be an accident. In England and Ireland the murder of or an assault upon a workman is an accident, though probably not in Scotland.

Arising out of and in the Course of the Employment.—An accident arises in the course of the employment if it happens while the workman is performing his duty to his employer; but to arise out of the employment it must be due to one of the ordinary dangers to which his work exposes him. Thus where a man was struck by lightning while sweeping the roads, that was not an accident arising out of the employment; but where a bricklayer, working on a high scaffolding, was struck by lightning, the accident arose out of the employment because there was special risk. Where an accident is caused by disobedience to orders, it does not arise out of the employment if the act is something quite outside the ordinary work. But every disobedient act is not necessarily outside the employment. An accident which happens just before work begins, or just after it has ceased, may arise out of and in the course of the employment if the workman is on the employer's premises. An accident which happens while a workman is taking a meal, or a drink, or relieving nature, may arise out of and in the course of the employment.

Serious and Wilful Misconduct.—A workman is not entitled to compensation where the injury is attributable to his own serious and wilful misconduct, such as drunkenness, or bringing a naked light too near an explosive. But serious and wilful misconduct does not destroy the right to compensation where death or serious and permanent disablement is caused. It should, however, be noted that in many cases the misconduct may be such that the accident does not arise out of and in the course of the employment.

Notice and Claim.—The workman must give notice of the accident as soon as practicable after it has happened, and before he has voluntarily left his employment. A claim for compensation must be made within six months of the accident, or, in case of death, within six months from the time of death. Neglect of these preliminaries may cause the right to compensation to be forfeited, though in certain circumstances the failure to give notice or make a claim may be excused (see s. 2). The notice of the accident should be in writing. As to notices in cases of industrial disease, see s. 8; and as to notices in cases of accidents to seamen, see s. 7. The claim for compensation does not mean the institution of legal proceedings; an ordinary demand or request for compensation is a claim. The claim need not be in writing. Notice of the accident is not a claim for compensation, though the two may be made at the same time and on the same paper. As to claims in cases of industrial diseases, see s. 8; and as to claims by seamen, see s. 7.

Who is liable to pay Compensation?—(1.) Generally the employer is the person liable to pay compensation (s. 1).

(2.) Where a person (the principal), in the course of or for the purposes of his trade or business, contracts with another person (the contractor) for the execution by the contractor of work undertaken by the principal, a workman of the contractor who is injured may claim compensation either from the principal or the contractor, except in certain contracts for agricultural work. If the principal pays, he may, however, usually recover the sum paid from the contractor. The principal is not liable unless the accident occurs in, on, or about his premises (see s. 4).

(3.) Where the accident is caused by the wrongdoing, negligence, default, etc., of a person other than the employer, the workman may either obtain damages at common law from that person, or may claim compensation from the employer. If the employer pays compensation, he may recover the sum paid from the other person (s. 6).

(4.) If an employer and a majority of his workmen so agree, a scheme of compensation may be substituted for the benefits of the Act, but such a scheme must be approved by the Registrar of Friendly Societies (s. 5).

Amount of Compensation.—For fuller details on this part of the subject, see Greenwood's *Amount of Compensation*, and *Review of Weekly Payments under the Workmen's Compensation Act.*

(1.) In case of death, where the workman leaves total dependants, a sum equal to three years' earnings, or £150, whichever is the greater, but never more than £300. If only partial dependants are left, the amount will be reasonable and proportionate to the pecuniary injury they have suffered, but not exceeding the amount which total dependants could obtain. If there are no dependants, medical and funeral expenses not exceeding £10 must be paid (Schedule I. (1)).

(2.) In case of injury a weekly payment must be made equal to half the average weekly earnings during the previous twelve months (or a shorter period if the workman has not been in the employment twelve months). It must not, however, exceed £1 per week (Schedule I. (1)). As to a workman under twenty-one, see Schedule I. (1), Prov. (*b*). If the incapacity lasts less than two weeks, no compensation is payable for the first week (Schedule I. (1)). No compensation at all is payable if the workman is disabled for less than a week (s. 1 (2) (*a*)). As to deductions from compensation, see Schedule I., Clauses 1 (*a*), (*i*), and (3). Where an employer has paid compensation for six months he has the right to insist on redeeming future payments by a lump sum; but the workman has no right to insist on redemption if the employer is not agreeable (Schedule I. (17)). As to the case of an injured workman leaving the United Kingdom, see Schedule I. (18). As to registration of agreements for redemption, see Schedule II. (10).

Medical Examination.—The injured workman must submit to be medically examined if the employer wishes (Schedule I. (4), (14), (15), (20)), and he must take proper steps to bring about his recovery. The right to compensation may be forfeited if he does not follow the doctor's instructions, and even for refusing to undergo an operation, though not if the operation is dangerous or its success doubtful.

Legal Proceedings for Recovery of Compensation.—Disputes as to compensation must be settled by arbitration (s. 1 (3)). But no arbitration will be allowed if there is no dispute. The usual arbitrator is the County Court Judge (in Scotland the Sheriff), but by consent of the parties a dispute may be referred to an arbitration committee or to a single private arbitrator. In England the County Court judge may, with the authority of the Lord Chancellor, appoint a single arbitrator. The County Court judge may summon a medical referee to act with him as an assessor (Schedule II. (1)–(5)).

Review of Payments.—Where weekly payments are being made, whether by agreement or under an award, either the employer or the workman may apply to have the payments increased, decreased, or ended (Schedule I. (16)). As to workmen under twenty-one, see Schedule I. (16), Proviso. Where the workman has recovered, but a recurrence of the incapacity is probable, a nominal award of one penny a week is often made. This can at any time be increased to a substantial amount if necessary. In Scotland this course is not adopted, but the right to future compensation may be preserved by a declaration by the court of the employer's liability.

Agreements to pay Compensation.—Where an employer agrees to pay compensation to an injured workman the agreement may be registered by the Registrar of the County Court without fee, and when so registered it is enforceable as a County Court Judgment (Schedule II. (9), (10)). Registration need not take place within six months of the accident, and a verbal or an implied agreement may be registered.

Bankruptcy of Employer.—Money due from an employer as compensation (up to £100) is a preferential debt in bankruptcy; and where the employer is insured against liability under the Act, the employer's rights against the insurers are transferred to the workman on the employer's bankruptcy (s. 5).

Election of Remedies.—An injured workman (or his relatives in case of death) may claim either compensation under the Workmen's Compensation Act, or damages under the Employers' Liability Act, 1880, or at common law, or under Lord Campbell's Act. But he cannot recover both damages and compensation; and where a claim for compensation is unsuccessful he cannot bring an action for damages (s. 1 (2), (*b*)). But where he brings an unsuccessful action for damages he may apply to the court in the same proceedings to assess compensation under the Workmen's Compensation Act (s. 1 (4)).

Rights of Injured Workmen, etc., under the Factory and Workshop Act, 1901, s. 136. See p. 194 of the chapter on the Factory Acts, and under the National Insurance Act, 1912.

The rights under the former Act are not affected by the Workmen's Compensation Act (see s. 1 (5)); but under s. 11 of the latter Act a workman in receipt of compensation or damages is disentitled *pro tanto* to sickness or disablement benefit.

5. **Bibliography.**—His Honour Judge Ruegg, *The Workmen's Compensation and Employers' Liability Acts.* John H. Greenwood, *Amount of Compensation and Review of Weekly Payments under the Workmen's*

Compensation Act, 1906. Sir F. Pollock, Bart., *The Law of Torts. The Yearly Statistics of Proceedings under the Workmen's Compensation and Employers' Liability Acts*, issued by the Home Office.

J. H. G.

EMPLOYERS' UNIONS.

It is not the purpose of this article to deal with the question of unions of employers from the historical point of view. That would require a very exhaustive examination of somewhat complicated questions, and would open too wide a field to be dealt with within the space at disposal; nevertheless, a brief survey of what has taken place within the last forty or fifty years seems almost necessary in order to make clear the present position of the question.

Organizations of persons engaged in various industries are of very old standing. They were often directed towards the regulation of the wages of those in their employment, but perhaps even more frequently this was not their primary object, which consisted in endeavours to regulate the prices of the article of manufacture. It not infrequently happened that organizations, having this for their prime object, were brought into conflict with the operatives in their employment. This was certainly the case in the coal trade of the north of England, and some very serious conflicts between the two parties ensued. During the latter part of the eighteenth and in the first half of the nineteenth century this was markedly the case in the northern coal fields; and the very elaborate organizations for dealing with questions arising between employers and employed, which now exist throughout the northern counties, owe their origin to the fact that employers had found it necessary to act together in wages questions long before the Trade Unions had reached the importance to which they subsequently attained. Without elaborating this proposition, it is enough to say that the custom of collective bargaining began to take important dimensions during the third quarter of the nineteenth century.

The legal restraint of trade combinations was relaxed, and the Trade Unions became more and more powerful. This made it necessary for the employers to form organizations to deal with the questions collectively from their point of view. The exceedingly unsatisfactory relations between the iron manufacturers of the north of England and their workmen had resulted in 1866 in a long and costly struggle. Similar experience in the carpet and also in other trades had brought about a simple form of arbitration, which had been found efficient in settling differences between the manufacturers and their workmen. The attention of Sir David (then Mr.) Dale was directed to the question; and in July 1867, on his motion, the Associated Chambers of Commerce, at a meeting in London, affirmed 'the desirability of establishing courts of conciliation for the settlement of disputes between masters and their employees.'

The view expressed in the resolution was, after some demur, accepted by the iron manufacturers, and in 1868 there was established an organization which had for its object the settlement of wages by means of bargaining, not between the individual workman and his employer, but between groups of workmen engaged in different factories and their employers.

In the earlier stages of the existence of Employers' Unions, those who favoured this method of dealing with questions arising between employers and workmen were met with an objection which was then very general, and which has still considerable weight. Many employers refused to negotiate with persons not in their actual employment. They contended that the questions to be settled affected them and the men in their employment alone, and that no third party was concerned or was competent to deal with such matters. This view has still many very influential adherents, and the railway strike of 1911 was entered upon by the men chiefly to insist on the right of the men engaged on the railways to select as they pleased those who should represent them in any discussion between the management and the workmen. But the current of opinion seems now to be strongly in favour of a practice which, for at least forty years, has been adopted with increasing readiness in the north of England.

It is difficult to resist the arguments used to enforce the practice. The workmen may reasonably contend that any person is at liberty to lay down the conditions under which he will deal with his fellow. If a man declines to deal with another except through an intermediary, the other party to the transaction must either accept the condition or abandon negotiations. What is true between two persons seems equally applicable between groups. It is hardly surprising that bodies of workmen, unpossessed of the knowledge or education permitting them to deal with their employers on equal terms, should desire to be represented by persons who in their judgment are able to cope with the difficult problems involved in a complicated wages settlement.

What happened in the manufactured iron trade happened also in a great number of industries; and now there remain but few where the employers are not united for the purpose of discussing with the workmen all questions which arise between the parties.

In recent years the system has developed further; and such unions of employers are no longer confined to the separate districts in which various industries are located, but tend to spread to the whole industry throughout the country. We have thus the Steel Smelters' Association embracing almost the whole of

Great Britain. In the coal trade there has existed for some years an organization intended to consider questions affecting the industry as a whole. This was not originally intended to deal with wages. In the coal trade, perhaps more than in any other, the local circumstances vary very greatly. The employers incline to the view that this fact very greatly affects the conditions of employment, and that wages which may be perfectly justifiable in one county could not be paid in another part of the country. The men appear to contend that the man is to be considered apart from his environment; and if a particular service obtains a certain wage in Yorkshire, a somewhat similar service is entitled to a like wage in Wales or Durham. For our present purpose we need not pursue this question further. It may suffice to point out that by insisting on their view the workmen in any industry can force the employers to combine for the purpose of discussing certain questions. This was notably the case in the coal strike of March and April 1912. The demand for the Minimum Wage preferred by the Miners' Federation of Great Britain was pressed on the whole of the coalowners of the kingdom, how different soever the conditions in various districts might be.

It is bootless to inquire whether this view was accepted by the representatives of the colliers in all parts of the country. It is enough that every district sent delegates to support the demand, and ultimately constrained the reluctant owners to meet those who appeared as the accredited agents of the various coal-mining districts of Great Britain.

The railway servants (in 1911) were apparently less successful. As has been already mentioned, that strike was initiated for the purpose of compelling the railway companies to receive persons not in the employment of the particular company in order to discuss questions of wages and hours. It presented a very remarkable feature, which must not be overlooked in considering the question of Employers' Unions. The precise point for which workmen employed by the other companies were contending had already been conceded for many years by the directors of the North-Eastern Railway Company. But in spite of this the men in the service of that company joined with their fellows, and left their work on the appointed day, not only in breach of their contract with the directors, but in spite of an arrangement which gave them all that the other companies were refusing their men. It is difficult to imagine two more striking examples of the way in which united action is in fact forced on employers.

Before we proceed to examine in more detail the nature and objects of the Employers' Union, it may be convenient to restate the line of development, and to indicate what may happen in the future. We have, in the first place, the employer making his bargain with the individual men without reference to any other—a state of things which still obtains in many branches of employment. Next, the men engaged at a particular establishment band themselves together, and seek to make bargains collectively through representatives chosen from among themselves. Then the men engaged in a particular industry in some district unite, and after more or less prolonged resistance by the employers compel them to deal with wages questions through the Union. This leads speedily to combinations between the employers. The expansion of the Union from a relatively small district to a larger area, and finally to the whole country, is the next step, which, as we have seen, is already being taken. It involves the enlargement, either by federation or otherwise, of the unions of employers, which is also occurring. Nor are there wanting signs that Trade Unions may spread beyond the limits of political units and embrace men engaged in industries in distant countries. As is well known, there already exist for other purposes international organizations of manufacturers, whose constitution could easily be modified to take cognizance of wages questions now beyond the scope of the rules. We are thus led to the conception of a possible international strike or lock-out in which some industry, vital to the well-being of the community, might seek to impose intolerable conditions on mankind. Recent experience does not lead us to dismiss this alarming contingency as beyond the range of possibility.

It remains to consider in more detail the methods adopted by Employers' Unions to accomplish their objects. The direct and patent interest of the employer is to keep his establishment at work without interruption, so that his capital may be utilized to the highest extent. When the loss of a particular man's services, either by his own act or by the act of his employer, merely meant the engaging of another to take his place, no question arose. Wages might be raised or reduced without questions being asked. But when the Trade Unions gradually became powerful, this state of things materially changed, and alterations of wages, both upward and downward, had to be discussed between the two parties to the arrangement. If this discussion was allowed, it was difficult to limit it to the simple issue, for the conditions under which men work are as important to them as the money reward for their services, and may indeed seriously affect it. The Employers' Union constantly found itself charged with settling the 'wages and conditions of service.' But from this it was an easy step to undertaking, not only the settlement of these larger matters, but also of all questions of the kind which arise between a particular employer and a man or men in his service. It followed from this that the Union of Employers had two distinct functions to discharge—(1) to settle with the men engaged in the industry the larger questions of rates of wages and general conditions of service which arise from time to time, and which may be called 'district' questions; and (2) to deal with smaller 'local' questions. As a matter of practice the first is usually dealt with by meetings between the Employers' Union and the Men's, the second being disposed of by a tribunal consisting of representatives of each side.

But it is obvious that having got so far it was necessary to go farther, and to provide machinery to dispose of questions which could not be solved by agreement between the parties.

This machinery is of two kinds, which are distinguished by the terms *conciliation* and *arbitration* respectively. The former purports to be a mere extension of the collective bargaining, but with a third party present, who by tact and discretion endeavours to smooth matters down, and to induce the parties to accept a solution which neither would consent to adopt of his own will. In the latter, the decision is ultimately left with an umpire, whose casting vote (often given under very strict conditions) decides the question submitted to him.

It is obvious that decisions arrived at by either of these methods described are subject to certain very distinct limits. An award which left the employer unable to carry on his business at an adequate profit would be as fruitless as one which placed the man in receipt of a wage on which he was unable to live his life in reasonable comfort. In the one case the factory would be closed, and the man would lose his employment; in the other, he would seek employment elsewhere.

This dilemma so far has rarely presented itself to the Employers' Union. By means of a fair discussion with the representatives of the men, it has been possible almost always to come to decisions which did not impose intolerable conditions on either side. Occasionally the matter has been submitted to the arbitrament of a strike. When this unfortunate course has been followed, the result has very frequently been that shown in Mr. Galsworthy's remarkable play called *Strife*, where, at the end the two protagonists, deserted by their respective partisans, agree that after great suffering to all concerned, they have arrived at a result which it was open to either of them to have accepted before the struggle began.

Up to the present time (subject to one exception mentioned below) the Employers' Unions have been purely voluntary associations, and their relations to the Trade Unions have been equally voluntary. Both parties have been content to rely on the sanction of public opinion to give effect to the decision arrived at. Except in certain trades in which it is alleged quite exceptional conditions prevail (Trade Boards Act, 1909), Parliament has not hitherto intervened to impose on either party statutory obligations to form associations or to take proceedings under them.

The one exception of a very startling character to this is to be found in the Coal Mines (Minimum Wage) Act, 1912. By that statute the coalowners of Great Britain, divided for the purpose into certain districts, have been called upon to form associations for the purpose of choosing persons to represent them on Boards of Arbitration, called in the Act District Joint Boards, to 'provide a Minimum Wage in the case of Workmen employed underground in Coal Mines.'

The Act continues in force for three years from March 29, 1912, and during that time differences arising under it are to be referred to the Joint District Boards. The Act contains no machinery for enforcing awards made by the Joint District Boards or the Chairman, for whose appointment it provides, and whose decision is final. Public opinion is apparently the sole sanction to which Parliament trusted. On the whole, this trust has been justified; for though there have been some cases in which the awards have not been accepted, these have been the exceptions and not the rule.

This and certain other circumstances seem to indicate a readiness on the part of the Government to proceed by legislation. It is possible that Unions of Employers will not only be given a statutory sanction, but may be made obligatory, so as to constitute part of a tribunal for regulation of wages by statute, indirectly if not directly. If so, the historian of the future will have to add a remarkable chapter to the volume dealing with the relation of employers and employed, already full of strange examples of what can be attempted in that complicated matter.

He will relate how the men's Trade Union, from being illegal and its members under certain disabilities, or even subject to severe penalties under conspiracy and other statutes, gradually freed itself from legislative thraldom, and finally reached a status beyond the law; how the employers, who at one time exercised most undue powers over the men (and women) in their employment, were driven to adopt measures to protect themselves from the exactions of the Trade Union, and before long found themselves compelled by statute to become members of organizations which were originally voluntary; how the tribunal thus constituted was left without any power to enforce its decisions, which, under circumstances very likely to arise, could be set at defiance by those on whom they purported to be binding. It seems difficult to suggest any less hopeful subject for legislation, or one more likely to add to the confusion existing on all matters connected with the relations between employers and employed, and thus to increase the growing disregard of law which has become so marked a feature in recent years. H. B.

Exchanges, Labour. See Labour Exchanges.

FACTORY CONSTRUCTION.

1. *Choice of Site.*
2. *General Design.*
3. *Types of Buildings.*
4. *Methods of Construction.*
5. *Structural Details.*
6. *Fire-resisting Construction.*
7. *Fire-fighting Equipment.*
8. *Lighting.*
9. *Heating and Ventilation.*
10. *Sanitary and Social Accommodation.*
11. *Bibliography.*

1. Choice of Site.—In cases where a factory need not be established upon some plot of land which for any special reasons must be employed for the purpose, the site of the buildings to be erected should be judiciously selected, with due regard to labour supply, housing accommodation for workmen, local rates of taxation, water supplies from public mains or artesian wells, physical characteristics of the surface, geological formation of the subsoil, traffic facilities, postal and telephonic communications, and any other considerations affecting the particular branch of industry to be conducted.

Some industries are hampered within the boundaries of cities and large towns by the stringent regulations of Trades Unions as to wages and conditions of work, a fact which has led many employers to establish factories in rural districts, where employees are accorded greater freedom of action.

As the establishment of a fairly large factory in or near a village or small town generally involves the importation of labour, the question of housing accommodation is obviously of importance; and it may be necessary for the employer to arrange for the building of cottages for some of his workpeople. Inquiry into the adequacy of the water supply is always desirable, and in certain industries the chemical and other characteristics of the water demand special consideration.

The ground should be reasonably level, but it may be remembered usefully that some industries entail the continuous production of slag, clinkers, and waste material that can be utilized with advantage for filling up hollows, road mending, and otherwise in the improvement of the site. Thus the cost of levelling may often be considerably reduced, concurrently with corresponding economy in the disposal of trade refuse.

If the site chosen should happen to be on the bank of a river, or in a river valley, it may be anticipated that the soil will be such as to require special precautions in connection with the foundations of the buildings in contemplation, and the risk of flooding must be taken into account.

In industries where raw materials and manufactured products have to be dealt with in very large quantities, it is necessary that the factory should be near a railway goods depot, and desirable that a railway siding should be run into the factory yard. The cost of carting heavy loads to and from the railway is a heavy item of expenditure that ought not to be created by the injudicious selection of a site.

A river or canal frontage frequently enables the proprietor of a factory to save largely in freight by bringing raw materials to the premises in ships, barges, or canal boats, and in many cases water transport can be adopted economically for the delivery of manufactured products, either to the nearest railway or seaport, or direct to purchasers or the town where purchasers carry on business. Therefore, the advantages of a river-front site may counterbalance the drawback constituted by its distance from the nearest railway depot.

Postal and telephonic facilities and various other matters vary in urgency with the nature of the business for which a factory is intended, and must be considered with due regard to individual requirements.

2. General Design.—The planning of a factory, whether this consists of a single building hemmed in by business premises or comprises several buildings arranged on a spacious plot of land, demands special qualifications and special knowledge of the industry to which the establishment is to be devoted.

Before the time comes for the architect to prepare building plans, or for the consulting engineer to consider the questions of steelwork, lighting, warming, ventilation, and mechanical equipment, the proprietor ought to have a definite conception as to the best arrangement of the site and the building or buildings required, for he should know better than any one else what will suit the needs of his own business. When a general scheme has been prepared, however roughly, the tasks of the architect and the consulting engineer are much simplified, and there ought to be no difficulty in designing buildings and equipment that will provide for the economical and satisfactory conduct of the industry in view.

In general terms, it may be said that an ideal arrangement is one where raw materials are brought into the factory at a point close to that where finished products are collected for dispatch, the workshops or workrooms being arranged so that the several processes to which the materials are successively subjected can be performed with a minimum amount of transport and handling, the materials being moved progressively forward through the various departments until the finished product emerges ready for delivery.

Subject to necessary modifications, a factory devoted to any industry, and housed in any kind of building or group of buildings, can be arranged in this manner, with consequent economy in management and running costs.

3. **Types of Buildings.**—The type of building selected for a factory is affected largely by the character of the industry to be conducted, as well as by the area of the available site or the value of the land.

In factories where heavy machinery is employed throughout, and where large quantities of heavy or bulky materials are used, single-story buildings are universally preferred; while in lighter classes of work buildings of two or more stories are fairly general.

Thanks to improved methods of building construction, machinery can be run on suspended floors without appreciable vibration; while lifts and elevators permit the transfer of materials and partly finished products from one floor to another at minimum cost. Therefore the adoption of buildings containing two or more stories no longer involves inconvenience or loss of working efficiency.

Nevertheless, the best modern practice inclines, wherever practicable, towards single-story buildings, with only such dividing walls and partitions as may be absolutely necessary.

The arguments in favour of this type of construction over buildings of the multiple-story type may be thus briefly summarized:—

(*a*) The facilities for natural lighting are far superior.

(*b*) Foundations for machinery can be more economically constructed, and there is less likelihood of vibration.

(*c*) All details of the construction, especially foundations, walls, and floors, are less costly.

(*d*) The risk of injury to the building and its contents by fire and water is greatly reduced.

(*e*) The building can be extended in any required direction from time to time.

(*f*) Materials are more readily and more economically handled.

(*g*) Workpeople are more directly under the supervision of the works manager and his assistants.

(*h*) Warming apparatus can be more easily installed, and the building can be effectively ventilated without the need for mechanical or other costly systems of artificial ventilation.

4. Methods of Construction.—Whether of the single-story or multiple-story type, factory buildings may be divided into the following classes, according to the method of construction adopted :—

(1.) Masonry buildings, with self-supporting walls of brick or stone, generally having interior steel columns and girders, and with either steel or timber roof trusses and framework.

(2.) Steel-frame buildings, with masonry enclosing walls, which in multiple-story buildings are merely curtain walls supported by the steel framing.

(3.) Steel-frame buildings enclosed by corrugated steel or other light material.

(4.) Reinforced concrete skeleton buildings, with enclosing walls of brick or other material, carrying no weight, and supported by the skeleton.

(5.) Reinforced concrete buildings, with outer walls and all other structural details in reinforced concrete.

(1.) *Masonry Buildings, with Self-supporting Walls.*—In this familiar form of construction the walls vary in thickness in proportion to the height of the building, and must be sufficiently massive to provide for stability, as well as for the loads to be transmitted by them to the foundations. The cost of this method of construction varies considerably with the requirements of local building regulations, and with the price of bricks and stone. For single-story buildings it may not involve cost greater than that of steel frame or reinforced concrete construction, while for buildings of two or more stories the cost is probably higher as a rule.

Fig. 1 is a cross section illustrating the construction of a single-story factory building two bays wide, with masonry walls, and lighted by side windows. The building is covered by roofing supported by steel principals and framing.

Fig. 2 is a cross section of a similar building, with north light or saw-tooth roofing.

Fig. 3 (*a* and *b*) includes a cross section and part elevation of a multiple-story factory building recently erected in London, the walls being of brick, the floors and roof of reinforced concrete, and the interior columns of cast-iron.

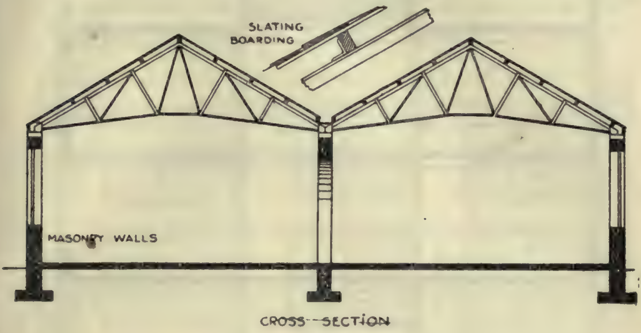

SLATING
BOARDING
MASONRY WALLS
CROSS-SECTION

FIG. 1.

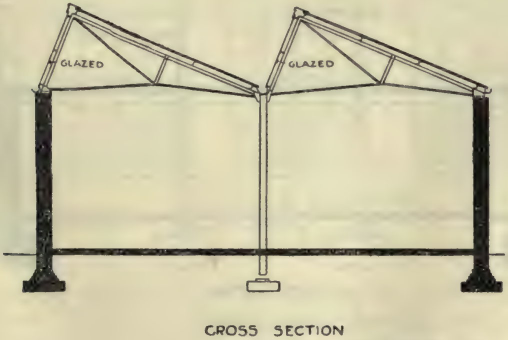

GLAZED
GLAZED
CROSS SECTION

FIG. 2.

(2.) *Steel-frame Buildings, with Masonry Enclosing Walls.*—As applied to buildings of two or more stories,

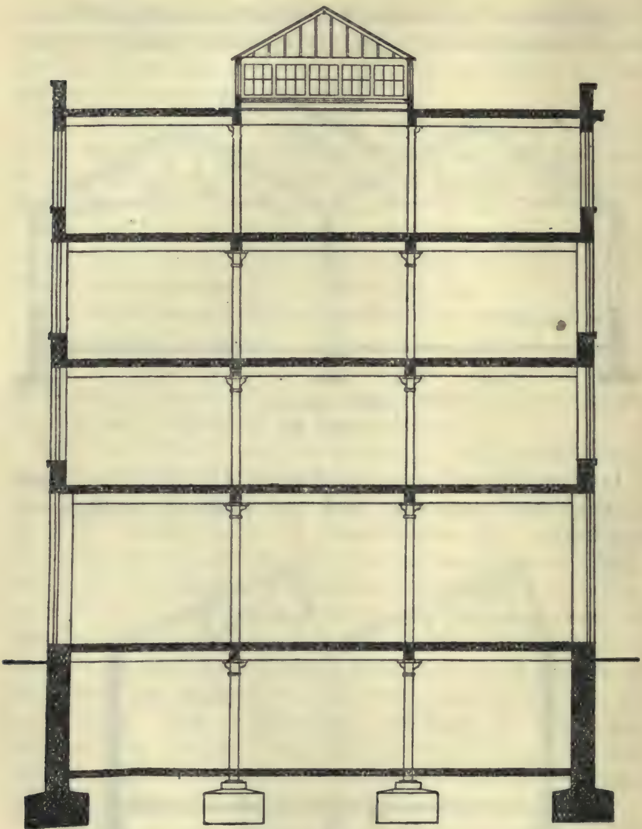
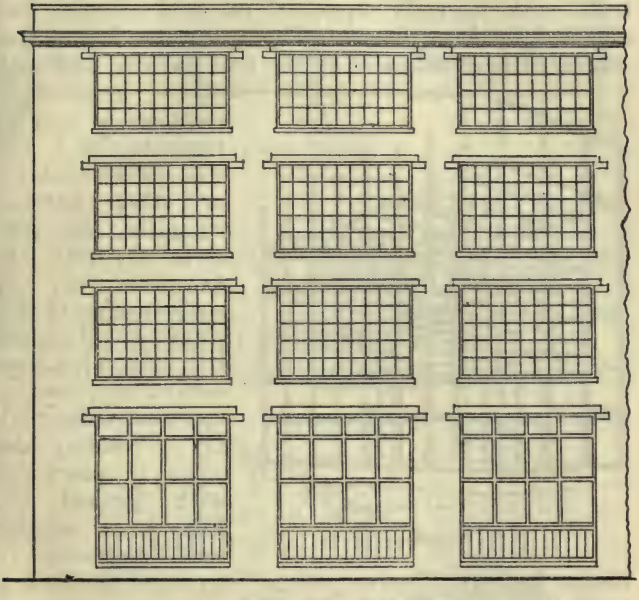


FIG. 3 (*a*).

this method of construction usually embodies a complete steel skeleton similar to that required for a warehouse building. As represented by the perspective drawing in Fig. 4, the skeleton consists of columns, connected laterally by wall lintels, girders, and floor joists. The skeleton is completed by the roof trusses and framework, or by framing for a flat roof. The upper floor panels are usually formed of concrete, reinforced concrete, or porous brick with reinforced concrete joints—all these types of flooring being capable of supporting heavy loads, of resisting fire, and of constituting effective horizontal bracing for the steel frame. Having no weight to carry beyond their own dead weight, the enclosing walls are much thinner than



PART SIDE ELEVATION

FIG. 3 (*b*).

those for a building constructed according to Method (1), and can be of uniform thickness throughout.

As applied to single-story buildings, Method (2) usually embodies a skeleton built up of a number of transverse frames, spaced 15 ft., 20 ft., or any convenient distance apart, each consisting of a steel roof truss, with its ends supported on steel columns and stiffened by knee braces. The transverse frames are connected longitudinally by the roof framing, and such other longitudinal members as may be requisite, and the wall panels of brick or other material complete the construction, with the exception of the roof covering of tile, slate, or galvanized iron. Fig. 5 is a cross section representing the steel framework of a building designed in accordance with Method (2). Fig. 6 is another cross section of a similar frame, with saw-tooth roof arranged for vertical north-light glazing.

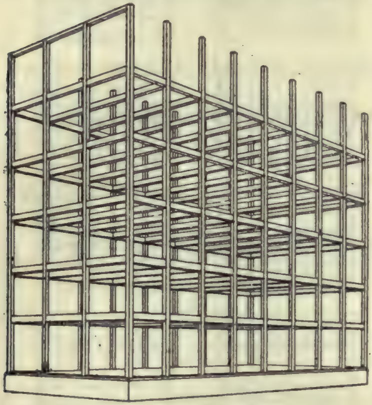

STEEL FRAME SKELETON

Fig. 4.

This type of construction is thoroughly sound and economical, and possesses the further advantage that it can be executed with great rapidity. The works of the British Westinghouse Company at Trafford Park, Manchester, comprising nine buildings with the collective area of some fifty-five acres, constitute a noteworthy example.

(3.) *Steel-frame Buildings, with a Light Covering.*—In

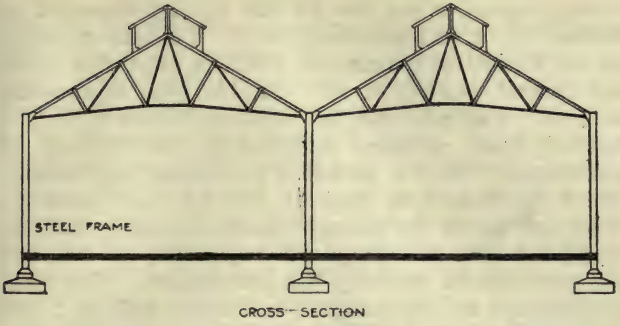

STEEL FRAME
CROSS-SECTION

FIG. 5.

this form of construction, the steel framework is built in accordance with either of the methods described in (2), as governed by the character of the building; but where one story only is contemplated, the transverse frames are connected by diagonal or other bracing, in addition to the longitudinal members of the roof

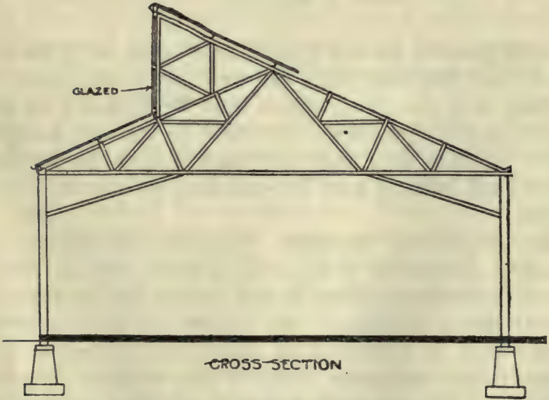

GLAZED
CROSS-SECTION

FIG. 6.

framing, so as to provide for the rigidity imparted in Method (2) by the enclosing walls. The side covering can be formed of corrugated steel, of expanded metal and cement mortar, or any durable type of sheeting material. The roof can be similarly covered. Fig. 7 includes three sketches illustrating this method of construction. In the middle is a diagram representing one of the transverse frames; the left-hand isometric projection shows the skeleton frame complete, and the right-hand isometric projection represents the building after the exterior covering has been added. This form of construction is economical, and if the walls and roof are formed of metal lathing and cement mortar or fire-resisting plaster, in two thicknesses, with an interior air space, the building will be well protected from the weather, and the construction may be regarded as being of permanent character. In order to provide adequate safety against fire, the steelwork ought to be cased with metal lathing and fire-resisting plaster or cement mortar.

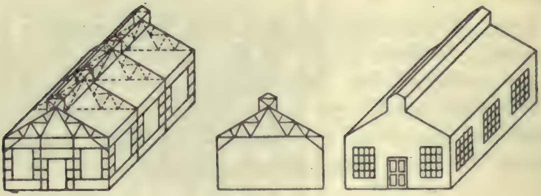


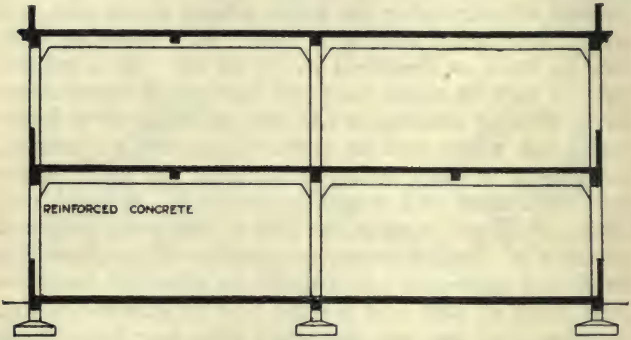
FIG. 7.

(4.) *Reinforced Concrete Skeleton Buildings, with Masonry Enclosing Walls.*—In general design a reinforced concrete skeleton is not unlike the skeleton for a steel-frame building, but differs in the important respect that in virtue of its monolithic character there are no joints whatever between the various structural elements. All the members are moulded successively *in situ*, so that the concrete is perfectly continuous throughout the columns, beams, floors, stairways, and roof. The result is that the skeleton is exceptionally rigid and free from vibration, even when heavy machinery is in operation on suspended floors. As the cost of reinforced concrete roof trusses is relatively heavy, it is usual in this form of construction to adopt flat roofs, designed similarly to floors. This alternative possesses the recommendation that it permits the upward extension of the building at any time by the simple expedient of carrying up the walls, adding a new roof, and using the original roof as a floor. The enclosing walls can be built as described in (2) or (3). As a general rule, it may be taken that this method of construction saves little or nothing in the case of single-story buildings; but where two or more stories are in question, there is an average saving of about 20 per cent. on the cost of a steel and masonry structure. A good deal obviously depends upon the cost of materials delivered at the site. So far as concerns reinforced concrete, the sand and aggregate can usually be obtained locally—very often at little cost beyond that of excavation and cartage—and the only materials that may have to be brought from a distance are Portland cement and steel bars for the reinforcement.

(5.) *Reinforced Concrete Buildings.*—The difference between this and the preceding method is that the wall panels are formed of reinforced concrete moulded at the same time as the skeleton and floors, as illustrated in Fig. 8. Owing to the more completely monolithic nature of the construction, a building of this class possesses still greater strength and rigidity than that ensured by reinforced concrete skeleton construction with independently built wall panels. The only possible objection to reinforced concrete wall panels is that, unless adequately reinforced against temperature stresses, the surface of the concrete is apt to develop small cracks, which, although quite unimportant structurally, are somewhat disfiguring. Such blemishes, however, can always be avoided by proper attention to the design of the reinforcement.

The relative cost of reinforced concrete and brick wall panels depends largely upon the local cost of materials.

5. **Structural Details.**—Whatever type of building or method of building construction may be adopted, it is important that due consideration be given to details affecting the stability, durability, and safety of factory buildings to be erected, and their suitability for manufacturing purposes.



CROSS SECTION

FIG. 8.

Foundations.—Before foundations of any kind are finally designed, reliable information must be obtained by trial borings, load-bearing tests, or otherwise, as to the load-carrying capacity of the soil.

Single-story buildings obviously necessitate less searching inquiry than structures of several stories ; but it is very undesirable that local subsidence or earth movements should affect any industrial building. Clay often causes serious damage after continued spells of dry weather, water-bearing sand or gravel may prove equally troublesome, and alluvial soils demand special treatment to ensure stability of the foundations placed upon them.

In some places where the surface soil is unreliable, a solid substratum may often be reached by excavation to the depth of a few feet, while in other cases it may be necessary to adopt special means of securing stable foundations.

Foundation rafts, formed of reinforced concrete, or of rolled steel **I**-beams embedded in concrete, are extremely useful for the uniform support of buildings erected on unstable soil, and the upper surface of such a raft can sometimes be utilized as a basement floor.

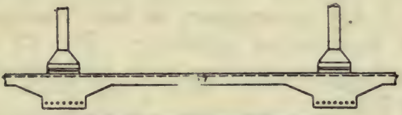


FIG. 9.

A building so founded is free from unequal settlement and consequent damage, although it may sink slightly as a whole, owing to compression of the soil.

Fig. 9 is a section including part of a reinforced concrete foundation raft, comprising beams connected by a continuous slab of concrete suitably reinforced. The columns here shown are of steel, but they would be of reinforced concrete in a building where the framework is constructed of that material.

Fig. 10 shows an independent footing for a reinforced concrete column, and Fig. 11 gives details of an extended footing, formed of rolled steel **I**-beams, for the support of a steel column.

The latter type of construction is also applied to foundation rafts covering the entire site of heavy buildings on unstable soil.

Fig. 12 contains a selection of typical wall footings as constructed for factory buildings in concrete, reinforced by expanded steel.

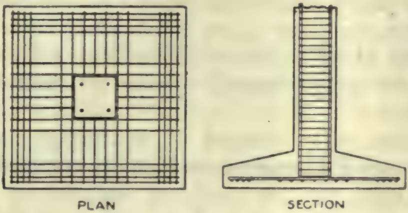


Fig. 10.

Reinforced concrete piles are largely employed in unstable soil for the support of wall footings, column bases, and foundations generally. Fig. 13 represents the use of piles in conjunction with a reinforced concrete foundation raft.

A method which has been successfully adopted on the Continent for the consolidation of unreliable soil is to form deep holes by dropping a pointed weight from a considerable height, and then to fill them up with concrete, rammed by dropping a flat-faced weight on each layer deposited.

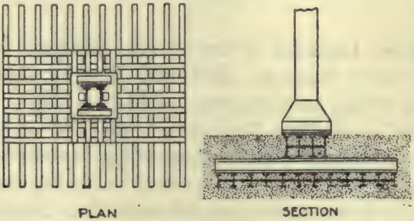


Fig. 11.

This method is known as the 'Compressol' system, and, as may be judged by Fig. 14, the bearing power of the piers thus constituted is far greater than that of ordinary piles.

Foundations for steam boilers, engines, and heavy machinery must be designed with the same care as those for the building itself, particularly in soil of unstable character.

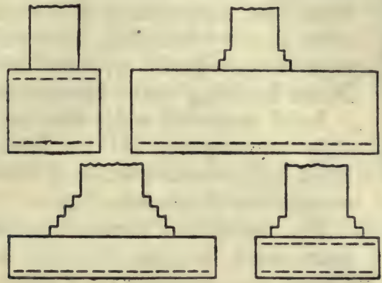


FIG. 12.

Framework and Walls.—In modern factory construction both steel frames and reinforced concrete skeleton buildings offer advantages distinctly worthy of attention. Apart from the questions of initial cost and rapidity of erection, either kind of skeleton lends itself well to future extensions, provides convenient means of sup-

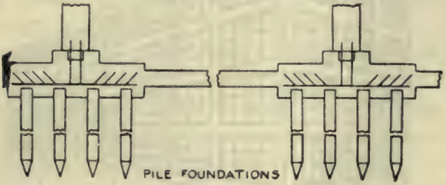


FIG. 13.

port for shafting, travelling cranes, electric runways, and other details of the mechanical equipment, and permits the outer wall panels to be composed almost entirely of windows—a feature of much importance in industries where abundant light is needed. This point is illustrated by Fig. 15, drawn from the photograph of a reinforced concrete factory building, but which may be regarded as equally representative of a steel-frame building with thin enclosing walls.

Solid masonry walls are far less adaptable to purposes of the kind mentioned than light curtain walls of brick in a steel or reinforced concrete frame.

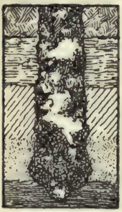


Fig. 14.

In a building of several stories the general framework is akin to that of a typical warehouse building, and presents no distinctive features in respect of factory construction beyond the special provision required in some industries for the support of heavy machinery and the installation of mechanical plant. In single-story buildings the design of the framework is affected by the type of roof truss best suited to individual requirements. Several types of roof truss are illustrated in Fig. 16.

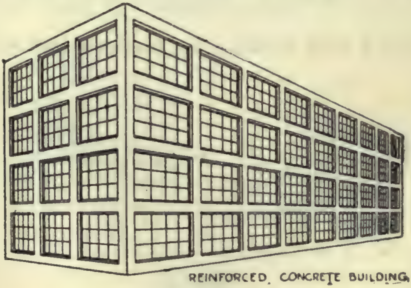


Fig. 15.

'Saw-tooth' or 'north-light' roofs are now very largely used in factories of all kinds, the short leg only being glazed, and either inclined, as in Fig. 2, or vertical, as in Fig. 6, and preferably placed to face the north, so as to ensure a constant and pleasant light, and to obviate the need for window blinds or screens. The interior condensation frequently giving trouble in saw-tooth roofs can be prevented by double glazing, with an air space between the sheets of glass, this device being of advantage also in cold weather by reducing the loss of heat from the building.

Floors.—Individual requirements governing the design and construction of flooring for factories are so varied that no general rule can be established as to the most suitable kind of floor for adoption. Ground floors may be formed of stone, brick, concrete, asphalt, timber, or of any of these materials, with a special surface covering. Except in factories where it is essential that the floor surface shall be capable of resistance to fire or great heat, the best flooring is one with a timber surface on a thin layer of asphalt laid on concrete. Floors of this type are elastic, non-heat-conducting, and comfortable for workpeople. They can be easily kept clean and repaired, and do not give off grit or dust to an appreciable extent.

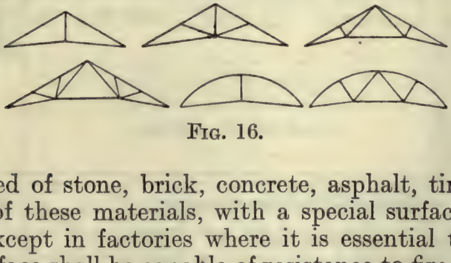


FIG. 16.

Suspended floors should always be of fire-resisting construction, with timber or any suitable surface covering. Reinforced concrete, reinforced brick, terra-cotta, and other types of fire-resisting floors are available in great variety, many of them being suitable for covering considerable spans without heavy beams or intermediate supports.

Fig. 17 represents the use of steel girders and joists in conjunction with concrete as frequently employed in floor construction for industrial buildings.

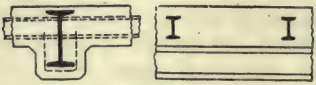


Fig. 17.

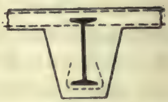


Fig. 18.

Fig. 18 shows the application of expanded steel for reinforcing concrete floor panels, supported by rolled steel girders. In this sketch the girder is encased in concrete, also reinforced by expanded steel.

Fig. 19 contains details of all the elements in a floor system of reinforced concrete; and Fig. 20 illustrates the construction of reinforced brick flooring, supported by rolled steel girders encased in concrete, with an outer envelope of fire-resisting plaster.

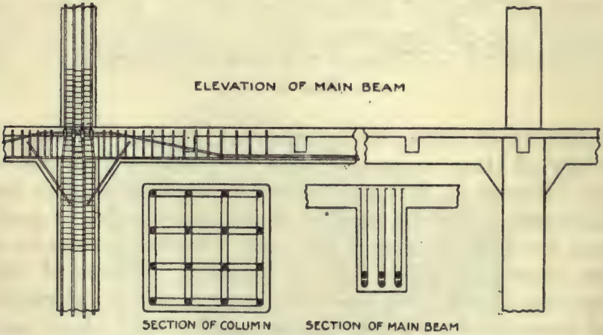


Fig. 19.

Timber floors, even if of the 'slow-burning' type, are not to be recommended, because they do not provide adequate safety against fire, and do not absorb vibration so well as the best types of fire-resisting floors.

Roof Coverings.—Flat roofs of permanent factory buildings, constructed similarly to floors, are usually coated with asphalt or one of the various materials on the market for the provision of a perfectly water-tight covering.

Sloping roofs can be covered with reinforced concrete, cement, mortar on metal lathing, slates, tiles, corrugated steel, or in accordance with any approved system of roofing.

For cheap and temporary roofs, corrugated steel is largely used, but being very liable to corrosion in spite of galvanizing and paint, it is less satisfactory than asbestos or other special sheeting. Asbestos tiles form an economical and durable alternative to ordinary tiles and slates.

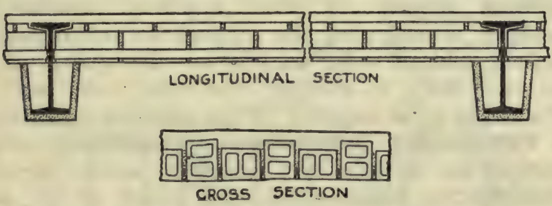


FIG. 20.

Apart from the questions of durability and resistance to fire from the inside or outside of the building, it is generally important that the roofing should be constructed so as to minimize the loss of heat during cold weather, to retard heat transmission from the exterior in warm weather, and to guard against the inconveniences due to the penetration of rain or to interior condensation.

Interior Partitions.—As far as may be found practicable, large areas should be subdivided in factories where combustible materials are used, and the interior partition walls should be of approved fire-resisting construction, provided with fire doors, so that any outbreak may be kept within the smallest possible limits. Woodwork ought certainly to be avoided as far as practicable in the form of partitions, door frames, and window frames; and in places where window sashes are fitted in partitions, they should be filled with wired glass, which possesses the valuable property of remaining intact until such temperature has been attained as will melt the glass.

Stairways and Lift Shafts.—In every factory building of more than one story the stairways should be of reinforced concrete or other approved construction capable of withstanding fire without the risk of sudden collapse; and in order to prevent the spread of fire from one story to another, the stair wells and lift shafts ought to be enclosed by fire-resisting partitions.

6. **Fire-resisting Construction.**—In preceding sections attention has already been drawn to several methods of fire-resisting construction and details of the same character. While a building entirely of reinforced concrete, with metal door frames, window frames, and sashes, wired glass glazing, and approved fire doors and shutters, affords the best possible security against fire, a masonry or steel-frame building, with fire-resisting walls, roof, and interior fittings, can be made reasonably safe by efficiently protecting all steelwork by encasing the various members in concrete, terra-cotta, or fire-resisting plaster laid on expanded metal or other approved metal lathing.

Fig. 21 shows six typical forms of fire-resisting columns. Two at the top left-hand side are of reinforced concrete, the unshaded part in each case being considered as fire protection, although moulded together with the concrete in the shaded core. The other columns shown are embedded in concrete, and further protected by fire-resisting plaster on expanded steel or other metal network.

As previously pointed out, the subdivision of large areas should be effected by means of fire-resisting partitions, and in the case of multiple-story buildings direct openings between the different floors should not be permitted to exist.

Although the most approved fire-resisting construction undoubtedly involves additional first cost, the savings due to the reduction of maintenance charges and smaller insurance rates are important assets on the other side of the account.

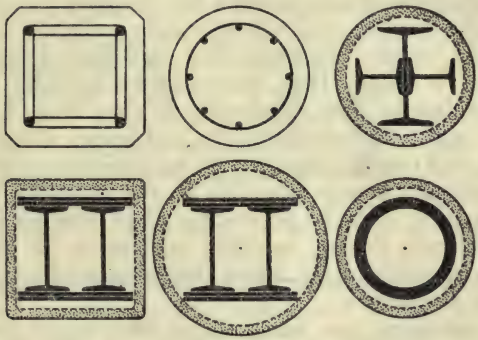


FIG. 21.

7. **Fire-fighting Equipment.**—Hydrants, hose-pipes, and fittings should be provided throughout every factory; and if the ordinary water service does not provide the requisite pressure, it is a small matter to lay down a fire pump capable of serving all parts of the establishment. Automatic fire alarms can be installed at relatively small cost; and in buildings where combustible materials are dealt with, the rooms on every story should be provided with automatic sprinklers, discharging showers of water over the entire area of the

floor in any part of the building as soon as the temperature has risen to a predetermined limit. Chemical fire extinguishers are also valuable for the speedy extinction of fire in its early stages.

8. **Lighting.**—Abundance of natural light can always be provided in multiple-story buildings of steel frame or reinforced concrete skeleton construction, owing to the fact that, if necessary, the panels between the principal members of the framework can be almost entirely occupied by windows. In single-story buildings the roof usually enables the designer to obtain all the light needed, and the enclosing walls are available for the same purpose. For artificial illumination nothing is better than incandescent metallic filament electric lamps, now obtainable in sizes from 5 candle-power up to 500 candle-power, and giving a white light which is of excellent quality for manufacturing processes. If electricity is not available in the neighbourhood of the factory, private generating plant can be installed at moderate outlay, enabling current to be produced at a cost considerably below that charged by electricity supply authorities.

Incandescent gas lamps have been much improved during recent years, and now give light of quality almost equal to that of incandescent electric lamps, although emitting considerable heat.

In districts where public supplies of gas are not available, acetylene gas and petrol air gas can be generated very conveniently, and if used in conjunction with incandescent mantles, furnish light of quality fully equal to that of incandescent electric lamps.

9. **Heating and Ventilation.**—Factory buildings of all kinds can usually be heated economically by exhaust steam from the main and auxiliary engines, or, if preferred, by live steam, at reduced pressure, or by water heated in either live or exhaust steam calorifiers.

In some multiple-story buildings it may be preferable to adopt the indirect heating system, wherein air is warmed by being passed through a special steam heater, or over steam coils, in a room near the boiler-house, and distributed by means of a blower through ducts in communication with every part of the building. Vitiated air is discharged through outlets, the requisite circulating power being derived from the main blower, or from the same blower with the aid of exhausting fans at different points. Natural ventilation by the aid of open windows, chimneys, and outlet ducts may be satisfactory in warm weather; but to ensure positive circulation of the air during the cold months, mechanical ventilation is preferable. In single-story buildings ample ventilation can be secured by means of louvres or hinged sashes in the roof or roof lantern.

Quite apart from the commendable desire of most employers to conduce to the well-being of their work-people by providing warmth and fresh air, it may be pointed out that these essentials are of direct commercial value by increasing the capacity of employees for work.

10. **Sanitary and Social Accommodation.**—Beyond such provision for the general health and welfare of work-people as may be covered by the selection of a site, and the construction and equipment of factory buildings, special accommodation is necessary in the form of cloakrooms, lavatories, and messrooms for work-people and members of the staff. The scope of such accommodation must be governed by the character of the industry in question, and also by local circumstances. In some cases the facilities afforded may be of a very simple nature, while in others it may be desirable to provide elaborate bath-houses, with appliances for washing and drying clothes worn during work hours, as well as completely-equipped kitchens and messrooms.

In country districts where a factory is surrounded by the homes of workpeople, much as the feudal castle was by its dependent town or village, social accommodation becomes desirable in the form of rooms for meetings of clubs and societies and for gatherings of workpeople generally.

The aspects of factory construction here briefly mentioned are discussed fully in the chapters on 'Factory Management,' and 'Model Factories and Villages.'

11. **Bibliography.**—Rivington, *Notes on Building Construction* (Longmans, Green, and Co.). C. F. and G. A. Mitchell, *Brickwork and Masonry* (B. T. Batsford). W. N. Twelvetrees, *Concrete-Steel Buildings* (Whittaker and Co.). M. S. Ketchum, *Design of Steel-mill Buildings* (New York: Eng. News Pub. Co.). J. K. Freitag, *Fireproofing of Steel Buildings* (New York: J. Wiley and Sons). W. W. Christie, *Chimney Design and Theory* (New York: D. van Nostrand Co.).

W. N. T.

FACTORY LAW: BRITISH.

1. *Definitions.*
2. *Classes of Workers protected by the Acts.*
3. *Provision relating to Health and Safety of Workers.*
4. *Hours of Employment, etc.*
5. *Education of Children employed in Factories.*
6. *Dangerous and Unhealthy Trades.*
7. *Voluntary Regulations.*
8. *Bakehouses.*
9. *Other Places to be deemed Factories.*
10. *Laundries.*
11. *Charitable and Reformatory Institutions.*
12. *Quarries.*
13. *Outworkers.*
14. *Protection of Pieceworkers.*
15. *Administration of Acts.*
16. *Truck Acts.*
17. *Shop Clubs Act*, 1902.
18. *Employers and Workmen Act*, 1875.
19. *Minimum Wage—Trade Boards Act*, 1909.
20. *Shop Acts.*
21. *Bibliography.*

Factory legislation in this country dates from the year 1802, and between that date and 1856 numerous statutes were passed to regulate the hours of labour of women, young persons, and children in textile factories, and to make provisions for their safety, etc. In 1864 and 1867 certain non-textile factories and workshops were dealt with, and in 1878, as a result of a Royal Commission appointed in 1875, a comprehensive Factory and Workshop Act was passed. This was followed by various other Acts in 1883, 1889, 1891, 1895, and 1897. Then the provisions of these Acts were consolidated in the Factory and Workshop Act, 1901, which is now the principal Act, though it must be read with the amending Acts of 1903, 1906, and 1907.

1. **Definitions.** *Textile Factories, Non-textile Factories, and Workshops.*—For definitions of these, see Factory

and Workshop Act, 1901, s. 149, and Schedule VI. As to domestic factories and workshops, see Factory and Workshop Act, 1901, ss. 111–115.

Application to Docks, Railways, and certain Buildings.—See *infra.*

2. **Classes of Workers protected by the Acts.** (1.) *Adult Males.*—These come within the provisions relating to ventilation, sanitation, cleanliness, fencing of machinery, fire-escapes and exits, and dangerous trades.

(2.) *Women*—that is, females of eighteen years of age and upwards; *Young Persons*—that is, persons of both sexes between fourteen and eighteen years of age, and children of thirteen, who have obtained an educational certificate (see *infra*). This class enjoys all the protection given to adult males, and is also protected by regulations defining working hours, providing for meal-times and holidays, and restricting overtime.

(3.) *Children.*—No child under twelve years of age can be employed (s. 62). The hours of labour are strictly defined, the employer is bound to see that the children attend as half-timers at some recognized school, and the provisions for health and safety are stricter than for classes (1) and (2).

3. **Provisions relating to Health and Safety of Workers.**—These are set forth in ss. 1–22. See also ss. 58 and 59, and Special Order of October 20, 1909. Tenement factories are dealt with in ss. 87–89. Men's workshops enjoy certain exemptions (see s. 57); but a Bill is now (1912) before Parliament for the repeal of this section.

Safety of Premises.—The building itself and all 'ways, works, machinery, steam-boilers, and plant' must be kept in a safe condition, otherwise their use may be prohibited by order of the magistrates (see ss. 17 and 18, ss. 104–106, and ss. 87 and 88).

Accidents.—All fatal accidents and certain accidents causing bodily injury must be notified to the district inspector or certifying surgeon (ss. 4 and 5, Notice of Accidents Act, 1906; ss. 104–106, Factory and Workshop Act, 1906, and Special Order of December 22, 1906). As to investigations and inquests, see Factory and Workshop Act, 1901, ss. 20–22.

Fire-escapes and Exits.—Where more than forty persons are employed, the district council must compel the owner to provide reasonable means of escape in case of fire. But a distinction is made between factories erected before 1892, workshops erected before 1896, and those erected after these dates. Provision is also made for settling disputes between the district council and the owner, or between the owner and the occupier (Factory and Workshop Act, 1901, ss. 14 and 16, and Schedule I.). The district council may make by-laws relating to means of escape from fire (s. 15, Factory and Workshop Act, 1901). See also the Model By-laws issued by the Local Government Board in 1906.

Sanitation.—Section 1 requires that every factory shall be kept clean and free from bad smells, and shall not be overcrowded. It must be ventilated so as to render harmless all noxious gases, vapours, dust, etc., generated in the processes of manufacture. Inside walls and tops must be limewashed, painted, varnished, or washed at prescribed intervals. But from this last-named provision such places as blast furnaces, brick and tile works, gasworks, engineering works, etc., are exempted by a Special Order of November 2, 1903. There must be at least 250 cubic feet of space for each person employed, and at least 400 cubic feet during overtime. See s. 3, and Special Order of December 30, 1903, which relates to bakehouses. As to the standard of ventilation generally, and in particular in textile factories, where artificial humidity is produced by steaming, see ss. 7, 94, and 111, Factory and Workshop Act, 1901, and Special Order of February 4, 1902. Special provisions as to cotton-weaving factories and (with certain restrictions) all other textile factories in which artificial humidity of the air is produced are set out in ss. 90–96, Schedule IV., and Special Orders of February 2 and December 24, 1898.

Section 6 requires a reasonable temperature to be maintained without interfering with the purity of the air.

As to keeping floors dry which are liable to be made wet, see s. 8; and as to the provision of sanitary conveniences, see s. 9, and Special Order of February 4, 1903. As to liability of owner of tenement factory, see s. 87. As to whitewashing of roofs of weaving-sheds and provision of cloakrooms, see s. 94 (4) and (5).

The provisions relating to sanitation, cleanliness, ventilation, etc., in factories are, generally speaking, enforced by the district inspector of factories (see s. 1 (2) and (5)), but the local authority has power to insist on cleanliness, proper ventilation, and the provision of proper sanitary conveniences, and to prevent overcrowding in workshops and work-places and domestic factories (see ss. 2 and 9, Factory and Workshop Act, 1901; ss. 38 and 91, Public Health Act, 1875; s. 22, Public Health Acts Amendment Act, 1890; s. 38, Public Health (London) Act, 1891). Where any district council neglects its duties under these Acts, the Secretary of State may appoint an inspector to exercise the powers of the district council under the Acts (ss. 4 and 5, Factory and Workshop Act, 1901). As to workshops and work-places in London, Scotland, and Ireland, see the Public Health (London) Act, 1891; the Public Health (Scotland) Act, 1897; and the Public Health (Ireland) Act, 1875.

Fencing of Machinery, etc.—Certain specified parts of machinery must be fenced, and all other parts of machinery and mill-gearing which are dangerous unless fenced must be fenced (see ss. 10 and 156, Factory and Workshop Act, 1901). The method of fencing must be the best known (*Schofield* v. *Schunk* (1855), 24 L.T.

(O.S.), 253). Steam boilers must be maintained in proper condition, have proper safety valves, gauges, etc., and must be examined by a competent person once every fourteen months (s. 11). Very detailed provisions relating to traversing parts of self-acting machines, and restrictions on the cleaning of moving machinery by children, young persons, and women are set forth in ss. 12 and 13. See also *Pearson* v. *Belgian Mills Co.* (1896), 1 Q.B., 244. As to liability of owner of tenement factory, see s. 87; and as to grinding of cutlery in tenement factory, see s. 88, Schedule III., and Special Orders of October 25, 1897, and October 15, 1909.

4. **Hours of Employment, etc.**—The times during which women, young persons, and children (but not men) may be employed in a factory or workshop are limited by ss. 23–67.

Women and Young Persons.—Sections 24 and 26 fix the hours of employment, and make provisions for meal times and Saturday half-holidays for women and young persons in textile factories, non-textile factories, and workshops. As to restrictions on the employment of young persons or women in the business of the factory or workshop outside the factory or workshop, see ss. 31 and 46, Factory and Workshop Act, 1901, and s. 3 (2), Shop Hours Act, 1892. Certain exceptions from the operation of ss. 24 and 26 are made by ss. 28, 29, 30, 36, 39–56, and Schedule II. See also Special Orders of December 26, 1907; December 20, 1882; May 12, 1902; September 11, 1907; October 23, 1903; February 3, 1902; October 13, 1908; December 13, 1909.

Overtime.—In certain cases women, young persons, and children may work a limited amount of overtime (ss. 49–53, Schedule II., and Special Orders of October 13, 1908; December 20, 1882; and October 20, 1909). But see s. 3, Employment of Children Act, 1903.

Night Work.—Male young persons over fourteen years of age (sixteen is the limit in some cases) may, under restrictions, be employed during the night in certain specified non-textile factories and workshops (ss. 54–56; and Special Orders of March 11, 1903; May 4, 1903; August 4, 1904; February 18, 1905).

Children.—Sections 25 and 27 fix the hours of employment and make provisions for meal times and Saturday half-holidays for children in textile and non-textile factories and workshops. The employment must be either on alternate days, or on the system of morning and afternoon sets. The position of children in textile factories is somewhat different from those in non-textile factories and workshops. As to restrictions on the employment of children outside the factory or workshop on the business of the factory or workshop, see ss. 31 and 46. A child must not be employed in lifting heavy weights, nor in any occupation likely to injure him, and he must not be employed as a half-timer in a factory or workshop, and also in some other occupation (s. 3, Employment of Children Act, 1903).

Meal Times.—Meal times for women, young persons, and children employed in factories and workshops must be simultaneous, and employment during meal times is forbidden (s. 33). For exceptions to this rule, see ss. 40–42, 111; and Special Orders of December 20, 1882; February 24, 1887; May 1, 1896; July 20, 1899; September 6, 1899; March 11, 1903; June 23, 1904; October 13, 1908; September 11, 1907; October 23, 1903.

Sunday Work.—As a rule, women, young persons, and children must not be employed in any factory or workshop on a Sunday (s. 34). Exceptions are allowed in creameries (s. 42), in the case of members of the Jewish religion (s. 48), and in the case of male young persons working in blast furnaces and paper-mills (s. 54, and Schedule VI.).

Holidays.—Under s. 35 the occupier of a factory or workshop is bound to allow the women, young persons, and children employed by him certain holidays, amounting in all to six days or twelve half-days. Certain exceptions to the rule are allowed by ss. 41, 42, 45, 54, and 111; and Special Orders of December 20, 1882, and October 13, 1908.

Exceptions may be allowed conditionally and may be rescinded.—Where special exceptions are made relating to overtime and night work, the Secretary of State may, for the protection of women, young persons, and children, impose additional requirements as to cleanliness, ventilation, and arrangement of hours of labour (s. 58, and Special Order of December 20, 1882). Any exception granted or extended under the Act may be rescinded by Special Order if it is deemed injurious to the health of the women, young persons, and children employed, or if it is deemed to be no longer necessary (s. 59).

Employment of Women after Childbirth.—A woman must not be employed within four weeks of giving birth to a child (s. 61).

Certificates of Fitness and Capacity for Children and Young Persons.—See ss. 63–67, and Special Order of August 31, 1906.

5. **Education of Children employed in Factories.**—See s. 4, Elementary Education Act, 1880; s. 6, Elementary Education Act, 1900; s. 2, Education (Scotland) Act, 1901; ss. 68–71, Factory and Workshop Act, 1901; Home Office Order of December 19, 1900; Regulations of the Board of Education, March 21, 1901; and in Ireland the Order of February 19, 1903.

6. **Dangerous and Unhealthy Trades.**—Sections 73–86.

Notification of Diseases.—Any medical practitioner attending a case of anthrax, or lead, phosphorus, arsenical, or mercury poisoning contracted in any factory or workshop must notify the case to the Home Office. Such diseases are to be regarded as though they were accidents, and notice must be sent to the district inspector and the certifying surgeon (s. 73, Factory and Workshop Act, 1901; and ss. 4 and 5, Notice of Accidents Act, 1906).

Precautions against Disease.—Factories and workshops in which lead, arsenic, or other poisonous substances are used must be provided with lavatories; and if the substances are so used as to produce dust or fumes, special places for taking meals must be provided (s. 75). Where dust, gas, vapour, or other impurity is generated by any processes, and is inhaled by workers in any factory or workshop, the inspector may order a fan or other appliance to be provided (s. 74). As to liability of owner of tenement factory, see s. 87. Where wet-spinning is carried on precautions must be taken for the protection of women, young persons, and children (s. 76). Sections 77 and 78 prohibit the employment of young persons and children in certain kinds of factories and workshops where such processes are carried on as the silvering of mirrors, the making of white lead, the melting or annealing of glass, the dipping of matches, etc., also the taking of meals in such places. See also Special Order of March 23, 1908. By s. 157 it is provided that ss. 74, 75, and 78 shall not apply to men's workshops; but a Bill is now (1912) before Parliament for the repeal of this section. As to grinding of cutlery in tenement factories, see s. 88, and Schedule III., and Special Orders of October 25, 1897, and October 15, 1909.

Special Rules and Regulations.—Under the Factory and Workshop Act, 1891, ss. 8, 9, 10, and 12, and Schedule I., the Secretary of State may impose *special rules* on factories and workshops (not domestic workshops) where the machinery, processes, or description of manual labour is dangerous, or where ventilation is defective, or dust is generated or inhaled in such quantities as to be dangerous. Such rules have no force in any factory or workshop unless they have been specifically established for that factory or workshop. Any differences of opinion between the occupier and the Secretary of State with regard to these matters are to be settled by arbitration. By the Factory and Workshop Act, 1895 (s. 12), representatives of the workmen are entitled to be present at such an arbitration. The Secretary of State has power, under s. 28, Factory and Workshop Act, 1895, to prohibit or restrict by special rules the employment of persons in dangerous trades. Under s. 79 of the Factory and Workshop Act, 1901, the Home Secretary may certify as dangerous any manufacture, machinery, plant, process, or description of manual labour, and may make *regulations* relating thereto. These regulations apply generally to classes of factories and workshops, and not to separate factories and workshops (s. 82). Notice must be given of proposed regulations and objections heard, and, if necessary, inquiries held (ss. 80 and 81, and Special Order of February 5, 1903). The regulations may impose prohibitions or limitations on the period of employment, the persons employed, and the use of materials or processes (s. 83).

7. **Voluntary Regulations.**—The Home Office has also issued Voluntary Regulations which it recommends for adoption in certain trades.

For trades to which Regulations (Compulsory and Voluntary) and Special Rules are applicable, see Home Office List of Official Forms.

8. **Bakehouses.**—Sections 97–102 contain provisions intended to secure sanitary and cleanly conditions in bakehouses.

9. **Other Places to be deemed Factories.**—By ss. 104–106 every dock, wharf, quay, and warehouse, and all machinery or plant used in loading or unloading any ship in any dock, harbour, or canal, and any premises on which machinery worked by mechanical power is temporarily used for building purposes, and every

railway line or siding (not being part of a railway) used in connection with a factory or workshop is to be deemed a factory for certain specified purposes.

10. **Laundries.**—Subject to the special provisions of the Factory and Workshop Act, 1907, the provision of the Factory and Workshop Act, 1901, relating to non-textile factories and workshops, apply to laundries. The Factory and Workshop Act, 1907 (s. 1), extends the operation of the Act of 1901 to laundries carried on by way of trade or for gain, or carried on as auxiliary to another business, or incidentally to the purposes of any public institution. Such laundries are non-textile factories or workshops according as mechanical power is or is not used. As to 'domestic' laundries, see s. 4, Factory and Workshop Act, 1907.

Overtime.—The employment of women on certain days in the week for longer hours than those specified in s. 26 of the Act of 1901 is allowed by s. 2 of the Act of 1907. But the total number of hours per week, including meal times, is not to exceed sixty-eight. The hours of young persons and children are fixed by ss. 26 and 27 of the Act of 1901.

Health Precautions.—Regulations are made by s. 3 as to the temperature of ironing-rooms, the carrying away of steam in wash-houses, draining of floors, and the use of stoves and gas-irons.

Particulars of Work and Wages.—See Order of December 23, 1911.

11. **Charitable and Reformatory Institutions.**—See s. 5, Factory and Workshop Act, 1907.

12. **Quarries.**—See s. 149 and Schedule VI. (Part II.), Factory and Workshop Act, 1901; ss. 1 and 3, Quarries Act, 1894.

13. **Outworkers.**—See also Trade Boards Act, 1909, s. 18. The industries in which outworking is regulated are enumerated in the Special Orders of May 23, 1907, and February 9, 1912. Occupiers of factories and

workshops, and contractors employed by them, must keep lists of the names and addresses of the outworkers employed by them, and copies of these lists must be sent to the district factory inspector and to the district council (s. 107). An employer who, after being warned, continues to give out work to persons working in an unhealthy place may, at the instance of the district council, be fined £10 (s. 108). As to the prevention of outwork being done in infected places, see s. 109; also Infectious Diseases (Notification) Act, 1889, s. 6, and Special Order of May 23, 1907.

14. **Protection of Pieceworkers.**—By s. 116 occupiers of textile factories are required to furnish each pieceworker with particulars of the rate of wages applicable to the work done. Particulars of the work, so far as it affects the amount of wages, must also be supplied, unless an automatic indicator is used. The same or similar provisions have been extended to a great variety of other industries by Special Orders of September 2, 1898; July 12, 1900; July 14, 1902; January 5, 1903; April 22, 1903; December 17, 1903; May 23 and September 23, 1907; September 14, Nov. 15 and 22, and December 20, 1909; December 23, 1911. The trades thus dealt with include certain of the metal trades, such as the making of cables, chains, anchors, etc., locks and keys, pens, wholesale tailoring, the making of felt hats, wearing apparel, boots and shoes, paper and card-board boxes, artificial flowers, brushes, nets, etc., and pea-picking. Outworkers are specifically included in some of the Orders. By s. 157 these provisions are not to apply to men's workshops. See also *Seal* v. *Alexander*, decided January 1912. But a Bill is now (1912) before Parliament for the repeal of this section.

15. **Administration of Acts.** *Offences and Penalties.*—Sections 118–134 provide for the administration of the Act, and the appointment of inspectors and certifying

surgeons and their powers and duties. A person entering into occupation of a factory or workshop must notify the district inspector (s. 127). As to returns to be made by occupiers, see s. 130; Order of October 21, 1907; and Census of Production Act, 1906, ss. 5 and 10, and Schedule.

Legal Proceedings (ss. 135–148).—If any person is killed or injured as a result of the contravention of the Act, a fine of £100 may be imposed on the occupier, and the whole or a part of this fine may be applied for the benefit of the injured person or his family (s. 136). Contributory negligence cannot be raised as a defence. *Blenkinsop* v. *Ogden* (1898), 1 Q.B., 783. The employment of a person in contravention of the Act is punishable by a fine of £3 for each person so employed (£5 if the offence is committed at night) (s. 137). As to immunity of occupier where the offence is committed by his agent, see ss. 140, 141. Offences against the Act are dealt with in Courts of Summary Jurisdiction, with an appeal to Quarter Sessions (in Scotland to the Court of Justiciary) (ss. 144, 145, and 159 (27)). As to period within which proceedings must be begun, see s. 146.

16. **Truck Acts.** *Wages to be in Coin.*—The purpose of this Act is to secure that every workman shall receive his wages in coin, and not in kind (s. 1). No contract of employment must contain any stipulation as to the manner in which wages are to be spent (s. 2; see also s. 6, Truck Act Amendment Act, 1887). Should an employer pay wages, or part of them, in goods, the payment (with certain exceptions; see ss. 23 and 24) is void (s. 3); and the workman may legally recover such wages as have not been paid in money (s. 4). An employer sued for wages cannot set off the value of any goods supplied (s. 5); neither can he sue the workman for the value of any goods supplied as wages (s. 6; see also s. 5 of the Act of 1887).

As to definition of workman, see s. 20; also s. 2 of the Act of 1887.

As to workers who make articles at home, and sell them to shopkeepers, dealers, or traders, who are practically their employers, see s. 10 of the Act of 1887.

The *Hosiery Manufacture* (*Wages*) *Act*, 1874, makes void all contracts for stoppage of wages (save for bad and disputed workmanship) and all contracts for frame rents and charges in the hosiery trade. It forbids employers in the hosiery manufacture to make deductions from wages in respect of frame rents and certain other charges.

Deductions from Wages allowed for certain Purposes.—Employers may supply medical attendance, fuel, tools, lodging, etc., to their workmen, and make corresponding deductions from wages. But the things must be supplied at cost price, and the workman must agree in writing (s. 23). As to deductions for sharpening tools, see s. 8 of the Act of 1887. And an employer may advance money to a workman for contribution to a friendly society or bank, for relief in sickness, for educating his children; such sums may be deducted from wages (s. 24; see also s. 7 of the Act of 1887). Section 4 of the Act of 1887 legalizes the custom whereby farm servants receive board and lodging in addition to a money wage. Deductions from wages in respect of fines or bad workmanship or materials, tools, machines, room, light, heat, etc., supplied to the workman for his work, or for damage done to materials, are not forbidden by the Truck Acts. But by the Act of 1896, ss. 1, 2, and 3, these deductions are only allowed where they are definitely prescribed beforehand, and the amount deducted is fair and reasonable.

Breach of the Truck Acts an Offence.—Acts done and contracts made in contravention of the Truck Acts are not only illegal and void, but the employer concerned is guilty of an offence punishable by a fine.

17. **Shop Clubs Act, 1902,** applies not only to shops and warehouses, but also to factories, workshops, and docks. This Act makes it an offence, punishable by fine, for an employer (*a*) to forbid a workman to be a member of a friendly society; (*b*) to compel a workman to join a shop club or thrift fund unless it has been registered under the Friendly Societies Act, 1896, and certified by the Registrar of Friendly Societies (ss. 1 and 2, and Schedule). Compulsory membership of an insurance society, etc., is not forbidden in the case of railway employees (s. 5).

18. **Employers and Workmen Act, 1875.** *Disputes between Employer and Workmen.*—The first part of the Act deals with disputes between employers and workmen (individually). Both County Courts (in Scotland the Sheriff Courts) and Courts of Summary Jurisdiction (in Scotland the Sheriffs Small Debt Courts) have jurisdiction to decide upon such disputes, though the latter courts are restricted to cases where the sum in dispute does not exceed £10. In the hearing of such disputes the court may order payment of wages or damages, and may adjust and set off the claim of one party against that of the other. It may rescind the contract of employment, ordering such payment of wages or damages as are just, and instead of awarding damages it may accept security for the performance of a contract (ss. 3 and 4).

Exception for Women, Young Persons, and Children.—Where a woman, young person, or child has forfeited any wages by reason of absence from or leaving work, this forfeiture is not to be deducted or set off against a claim for wages, etc., due before the absence, etc., except to the amount of the damage caused by the absence, etc. (s. 11).

Apprentices.—In a dispute between an employer and an apprentice, the apprentice may be ordered to perform his duties under the apprenticeship contract, and if he does not comply with the order may be imprisoned for fourteen days. The contract of apprenticeship may be rescinded, and, where it seems just, the repayment of the whole or part of the premium may be ordered. Any person who is, under the contract of apprenticeship, responsible for the good conduct of the apprentice may be summoned before the court, and ordered to pay damages (ss. 5–7).

Procedure.—The mode of giving security and the procedure before the Court of Summary Jurisdiction are dealt with in ss. 8 and 9. The proceedings are not criminal proceedings, and, except in the case of an apprentice, attendance at the court cannot be enforced by a warrant under the Summary Jurisdiction Act.

Workman is defined so as to exclude domestic and menial servants, and non-manual workers (see s. 10).

19. **Minimum Wage—Trade Boards Act, 1909.**—The Act applies only to the trades specified in the Schedule, but the list may be extended by Provisional Order, confirmed by Act of Parliament (s. 1). For each trade or branch of a trade one or more Trade Boards are to be established (s. 2). As to their constitution, see ss. 11–13. A Trade Board may establish District Trade Committees (s. 12).

The duties of a Trade Board include the fixing of minimum time-rates and general minimum piece-rates (s. 4), and also the consideration of and reporting upon matters having reference to the industrial conditions in the trade, and which have been referred to it by the authorities (s. 3).

The rates only become obligatory by Order of the Board of Trade (s. 5), but prior to this they may have a limited operation (s. 7). As to enforcement of rates, see ss. 6, 9, 10, 14–18. Provision is made in s. 8 for persons employed by piece-work where there is a minimum time-rate but no general minimum piece-rate.

20. **Shop Acts.**—These are now six in number (1892–

1912). The most recent and most far-reaching came into operation on May 1, 1912.

21. **Bibliography.**—See p. 206. J. H. G.

FACTORY LAW: COLONIAL.

Hours of Labour.
Holidays.
Overtime.
Wages.
Outworkers.
Prevention of Infection.
Stamping of Imported Goods.
Seats for Women.
Bibliography.

Most of the British Colonies have Factory Acts on their statute books. These Acts deal with most of the matters dealt with in the British Factory Acts, such as inspection of factories, health, safety, accidents, fencing of machinery, etc., fire exits, etc., employment of children, hours of labour for women and children, dangerous and unhealthy trades. The following provisions, found in various Colonial Factory Acts, are particularly worthy of notice :—

Hours of labour of men are regulated in New Zealand [1901] 18,* [1910] 3 ; South Australia [1907] 72, 73 ; Tasmania [1910] 52.

Holidays are prescribed in New Zealand [1901] 33–35, [1907] 9, 11, 15.

Overtime by men is restricted in New Zealand [1901] 22, [1907] 6, [1910] 2, 3, 4 ; Tasmania [1910] 52.

Overtime by women and children is restricted in New Zealand [1901] 22, [1902] 2, [1907] 6, [1910] 2, 3, 4 ; Queensland [1900] 24, [1908] 5, 14 ; New South Wales [1896] 37, [1909] 14 ; Victoria [1905] 40, [1905, No. 2]

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* The numbers in square brackets—for example, [1900]—give the year in which the Act was passed. The smaller numbers—for example, 3, 9, etc.—give the numbers of the sections in which the provisions are found.

8; South Australia [1907] 65, 67, 68, [1910] 16, 38, 40; Western Australia [1904] 22; Tasmania [1910] 51, 53; Quebec Revised Statutes, 1909, Art. 3,838; Nova Scotia [1901] 17–19, [1909] 3; New Brunswick [1905] 7; British Columbia [1908] 13, 14; Manitoba [1902] 12–14, [1904] 6, 7; Ontario [1887] 10, 11 (see Revised Statutes of Ontario, 1897), [1908] 1, 3, [1911] 1.

Payment for overtime is regulated in New Zealand [1901] 22, [1910] 2, 3; Queensland [1900] 24, [1908] 14; New South Wales [1896] 37; Victoria [1905] 40, 90, Schedule V.; South Australia [1907] 65, [1910] 20; West Australia [1904] 22; Tasmania [1910] 51, 52.

Wages are regulated in New Zealand [1901] 31, [1905] 2, 3, [1907] 14, [1910] 2; Queensland [1900] 24, 25, 45, [1908] 12, 13; Wages Board Act, 1908; New South Wales [1896] 13; Minimum Wage Act, 1908; Victoria [1905] 75–126, [1905, No. 2] 15, 16, [1907] 2, 7–18, 33, 34, [1909, No. 2] 2, 5–12, 38, 39, [1910, No. 2] 2–16; South Australia [1907] 78–140, [1908] 3, 4, [1910] 18–35, 44, 45, 48, 50; Tasmania, Wages Board Act, 1910.

Deductions from wages or truck arrangements are forbidden or limited in New Zealand [1901] 23; New South Wales Truck Acts, 1900 and 1901; South Australia (1910] 17; West Australia [1904] 24; Truck Acts [1899] [1900] [1904].

Employment of outworkers is regulated in New Zealand [1901] 28–30; Queensland [1908] 6; New South Wales [1896] 14, 15; Victoria [1905] 21–23, [1905, No. 2] 15, [1910, No. 2] 27; South Australia [1907] 18, 20, [1910] 8; West Australia [1904] 38; Tasmania [1910] 17; British Columbia [1908] 57; Manitoba [1902] 56; Ontario [1900] 1.

Precautions against the contamination of food or textile fabrics by unhealthy workers are taken in New Zealand [1901] 44, 45, [1902] 4; Queensland [1900] 34, 49; West Australia [1904] 28; New Brunswick [1905] 15.

Precautions against the manufacture, etc., of goods in infected places are taken in New Zealand [1901] 48, [1907] 13; Queensland [1900] 34, 49; New South Wales [1896] 25, [1909] 9; West Australia [1904] 30; Ontario [1900] 4, 5.

Employment of persons incapacitated through ill-health is prohibited in New South Wales [1900] 41; Queensland [1900] 49.

Stamping of furniture, to show whether it is imported or not, is required in Victoria [1905] 67–74, [1905, No. 2] 13, 14; West Australia [1904] 47.

Seats for women in factories are required in Queensland [1900] 33, [1908] 26; New South Wales [1896] 24, [1909] 7.

Saskatchewan received a Factories Act in 1909, and this was amended in 1911.

Natal and Cape Colony have no Factory Acts.

Shop Acts.—Several of the Colonies have Shop Acts, which deal with the following matters :—

Closing time and hours of employment are regulated in New Zealand [1904] 3, 4, 5, 21–23, [1905] 3, 4–7; Queensland [1900] 51, 58, [1908] 16, 18–20, 24, 25; New South Wales [1896] 43, 44; Early Closing Acts, 1899, 1900, 1910; Early Closing (Hairdressers' Shops) Act, 1906; Saturday Half-holiday Act, 1910; Victoria [1905] 127–129, 132, 134–139, 144–146, [1905, No. 2] 3, 18–30, [1907] 22, 23, 26, 27, 40, [1909, No. 2] 17, 20, 22, [1910] 28, 32–34, 38–40, 43, 45; West Australia [1902] 4, 5, 7, 9, 12, [1904, No. 1] 4–6, 10, 11, 12, 14, 15, [1904] 2, 3; Tasmania [1910] 59, 60; Manitoba [1902]; Ontario [1888] 6–9, 39, 44 (see Revised Statutes of Ontario, 1897); Nova Scotia [1895]; British Columbia [1900] 3–12, 19, [1901] 7, 9, 10, [1902] 2, [1907] 2; Cape of Good Hope—The Shop Assistants Act, 1899; The Half-holiday Act, 1899.

Exceptions are made in some Colonies with regard to food shops and restaurants; in others, with regard to chemists' shops—for example, New Zealand [1904] 15, [1905] 3, 9; Queensland [1900] 50, 55, 57, [1908] 15, 23; Victoria [1905] 127, 128, Schedule IV., 145, 147, [1905, No. 2] 20; West Australia [1902] 8, 10, 23; Manitoba [1902]; Ontario [1888] 44 (see Revised Statutes of Ontario, 1897); British Columbia [1900] 12, 13.

Holidays are prescribed in New Zealand [1904] 8–20; Queensland [1900] 51, 52, 55, 56, 58, [1908] 16–18, 21, 22; New South Wales, Early Closing Acts [1899, 1900, 1906, and 1910], Saturday Half-holiday Act [1910], Butchers' Shops Sunday Closing Act [1902]; Victoria [1905] 130, 131, 133, 137–139, 141–145, [1905, No. 2] 26, 30, 36, [1907] 19, 21, 29, 47, 48, [1909, No. 2] 13, 14, 26–30, [1910, No. 2] 29–31, 35–37, 41, 44, 49, 50, 52, 54; West Australia [1902] 4, 10, [1904, No. 1] 5, 11; Manitoba [1902]; British Columbia [1900] 3, [1902] 2, [1907] 3; Cape of Good Hope, The Half-holiday Act [1899].

Overtime is regulated in New Zealand [1904] 4; Queensland [1900] 58; Victoria [1905] 146, 148, [1907] 22, [1910] 39, 47, 48; West Australia [1902] 9.

Payment for overtime is prescribed in New Zealand [1904] 4; Victoria [1907] 20, 23, [1909, No. 2] 37.

Meal times are regulated in New Zealand [1904] 5; Queensland [1900] 24, 32, [1908] 10, 26; Victoria [1905] 146, [1909, No. 2] 18; West Australia [1902] 9, 11; Nova Scotia [1895] 2; British Columbia [1900] 19; Ontario [1888] 7, 12 (see Revised Statutes of Ontario, 1897).

Precautions against contamination of food and clothing by unhealthy workers are enforced in New Zealand [1904] 29; Queensland [1900] 34; British Columbia [1901] 8; Ontario [1888] 40 (Bakehouses). See Revised Statutes of Ontario, 1897.

Offices.—Employment in offices is regulated in New Zealand by the Shops and Offices Acts, 1904 and 1905;

in New South Wales by the Clerical Workers Act, 1910, which also enacts a minimum wage for clerks.

Bibliography.—See p. 206. J. H. G.

FACTORY LAW: INDIAN AND FOREIGN.

1. *Germany.*
2. *France.*
3. *Austria.*
4. *Belgium.*
5. *Switzerland.*
6. *Italy.*
7. *Holland.*
8. *Norway.*
9. *The United States.*
10. *India.*
11. *Japan.*
12. *Bibliography.*

1. **Germany.**—*The Industrial Code* of June 1891, as modified by the Acts of 1891, 1903, 1908, and 1911, and Orders made in pursuance thereof, applies to the whole Empire. The hours of women, young persons, and children are regulated. Sunday labour is forbidden, and holidays are appointed. There are the usual provisions for securing the safety, health, and morality of workers, while dangerous and unhealthy trades are regulated by special rules. The truck system is also dealt with.

The Employment of Children Act, 1903, regulates child labour during out-of-school hours.

The Home Work Act, 1911, regulates the sanitary conditions of premises where outworkers are engaged, and requires particulars of work and wages and lists of outworkers to be furnished.

The various states of the Empire have the right to enact more stringent measures, and many of them do so.

2. **France.**—A Labour Code (*Code du Travail et de la Prévoyance Sociale*) regulates the hours of men, women,

and children, and makes provisions for their health, safety, and morality.

It is worthy of note that there is an exact limitation of the weights which may be carried, pushed, or hauled by women and children.

There is a Schedule of dangerous trades, and special rules are issued. The truck system, Sunday labour, and holidays are all dealt with.

3. **Austria** has an Industrial Code (1885), which has been amended by various laws passed in 1895, 1897, 1902, 1905, 1907, and 1911. Numerous occupations are specifically excluded, such as agriculture and forestry and related industries, ordinary unskilled manual labour, domestic service, transport service, etc. But shops and stores are included.

The Code is supplemented by numerous Orders.

The hours of men, women, and children are regulated, and intervals of rest prescribed in the course of each working day. There are provisions relating to safety, health, Sunday rest, the truck system, etc. Dangerous trades are dealt with by special rules. An Act of 1911 forbids night work by women.

4. **Belgium.**—Factory legislation may be said to have commenced in 1887. The Acts of 1887, 1888, and 1889, supplemented by decrees, ordinances, and regulations, are for the protection of males under sixteen and females under twenty-one, and make no provision for adults, except women after confinement. An Act of 1911 does, however, prohibit night work by women; and an Act of 1905 secures to all, adults (with exceptions) as well as minors, a Sunday holiday.

Payment of wages, the truck system, etc., are dealt with in the Act of 1887; while provisions relating to hours of labour, night work, health, and safety, with a Schedule of dangerous trades (regarding which special rules are issued), are contained in the Act of 1889.

5. **Switzerland.**—The Confederation has power under

the Constitution to establish uniform regulations concerning employment of children in factories, and the hours of labour for adults. The basis of the labour legislation of the Confederation is the Factory Law of 1877. This regulates the hours of labour of men, women, and children, and night work. It makes provision for Sunday rest, and for the safety and health of workers, dangerous trades being regulated by special rules. Factory occupiers must publish rules as to conditions of employment, discharge, wages, fines, etc. The amount of the fines is limited, and they must be used for the benefit of the employees—*e.g.* in relief funds.

The Cantons legislate also, the regulation of the labour of children and young persons being largely in their hands. In more than half of the Cantons, Apprenticeship Laws are in force. These are worthy of some notice.

6. **Italy.**—The Industrial Laws are those of June 1902 and July 1907, that of November 1907 (the 'Unified Text'), and an amending law of 1910. The hours of women and children and night work are regulated, and intervals of rest and weekly rest-days and holidays are prescribed. There are provisions relating to health and safety, and to dangerous, fatiguing, and unhealthy trades. Dangerous trades are scheduled.

7. **Holland.**—The Labour Act (*Arbeidswet*), 1911, and Orders made thereunder, regulate the hours and conditions of work of women and young persons. Night work for young persons under seventeen is prohibited, no exceptions being made.

The safety and health of workers are secured by the Safety Act (*Veiligheidswet*), 1895, and its amending Acts.

The Nuisances Act (*Hinderwet*), 1875, and amending Acts, regarding permits for carrying on continuous trades, etc., are more for the protection of the general public interests.

The Civil Code and its amending Act of 1907 contain provisions relating to truck, particulars of piecework, etc.

8. **Norway.**—The Factory Act of 1909 regulates the hours of labour of young persons under sixteen, and contains provisions for the safety and health of workers, dangerous trades being scheduled. The truck system is dealt with, and Sunday rest prescribed.

The Eighty-ninth Bulletin of the Bureau of Labour, Washington, U.S.A., 1910, contains a very lengthy article on Child Labour Legislation in Europe, by C. W. A. Veditz.

9. **The United States.**—As the various states of the Union have their own particular Factory Laws, of varying degrees of stringency and laxity, a brief summary of American Factory Legislation is an impossibility. The reader is therefore referred to the following publications of the Washington Bureau of Labour: 10th Special Report on the Labour Laws of the United States, 1904; the 85th Bulletin, November 1909, containing a Review of the Labour Legislation of 1908 and 1909; the 52nd, 62nd, 73rd, and 91st Bulletins.

10. **India.**—The Indian Factory Act of 1910 applies to factories where more than forty-nine persons are simultaneously employed, though the Local Government may extend the operation of the Act to factories employing not less than twenty. In textile factories the hours of labour are fixed for men, women, and children; in non-textile factories for women and children only. A child is a person between nine and fourteen years of age. Night work is regulated, and a Sunday rest or some other holiday during the week is prescribed. There are numerous provisions, as in the English Acts, relating to cleanliness, sanitation, artificial humidity, accidents, etc., though the regulations as to the fencing of machinery are not so good. The maximum fine for contraventions of the Act is 200 rupees (£13).

11. **Japan.**—The first Factory Act was passed in March 1910. It applies to factories with more than fifteen employees, and to all places where the work is dangerous or unhealthy. The employment of children under twelve (in certain cases ten) is forbidden. The hours of women and children are regulated, and so is night work, and women and children are entitled to at least two holidays per month. No direct provision is made for the fencing of machinery, but young persons must not be employed in dangerous and unhealthy places. The maximum fine for contraventions of the Act is 500 yen (£51, 5s.). The Act also deals with the subject of Workmen's Compensation, and makes the employers liable not only for accidents but for illness.

For particulars respecting the yearly changes in and additions to the Labour Laws of the principal countries of the world, the *Annuaire Belgique* (a yearly publication of the Belgian Labour Department) may be consulted.

12. **Bibliography.**—*Redgrave's Factory Acts, etc.* The Statutes of the Various British Colonies. Violet R. Markham, *The Factory and Shop Acts of the British Dominions* (1906). The Bulletins of the Bureau of Labour, Washington, U.S.A. The *Annuaire Belgique*, a yearly publication of the Belgian Labour Department. The periodical publications of the British Association for Labour Legislation. J. H. G.

FACTORY MANAGEMENT.

1. *Working Hours.*
2. *Time-keeping.*
3. *Management.*
4. *Drawing Office.*
5. *Stores and Purchasing Department.*
6. *Pattern Shop.*
7. *Foundry.*
8. *Machine Shops.*
9. *Fitting and Assembly Shop.*
10. *Tool Room.*
11. *Works Manager's Office.*
12. *Factory Expense.*
13. *Bibliography.*

Although the work of the publicity and sales branches of modern factories is of extreme importance to the general welfare and success of any firm, it must not be forgotten that whatever profits accrue are largely due to the organization which has control over the inside management. Years ago, when industrialism was in its infancy, large profits were made under conditions which to-day appear lax and haphazard. Strenuous and ever-increasing competition, the invention of labour-saving machinery, and the spread of technical education have introduced fresh elements into industrial life, which have had the result of producing a much higher efficiency than that formerly known or sought. A modern system of factory organization is like a high-class machine tool—it can be done without, but not economically. Specialization has become the order of the day, and it is now possible to fix standards which could not easily have been adopted in factories dealing with a variety of work. There is no doubt specialization—in the great majority of cases—spells cheapness of production and a greater efficiency; but the possibility of too bigoted an outlook must be avoided. Many mistakes, entailing the loss of considerable sums and retarding progress, were due to the restricted ideas of the electrical engineer when the question of textile-mill driving was first considered, the work being thought similar in most respects to ordinary factory driving. A narrow outlook in factory management is a deplorable and costly state. No hard and fast rules of conduct can be laid down; broad principles should be studied, but particular methods adopted.

Although, in the following matter relative to factory management, the type of factory selected is an engineering works employing about a thousand men, making certain standard lines of machines, besides doing general work, the basic principles will be found useful in any kind of factory.

Wherever possible, the inside management should be consulted as to the site and lay-out of any new works. It will be easily understood that a poorly-designed lay-out will hamper production, as a particular piece of work may, instead of passing continuously onwards towards the delivery end, have to be carried back for a certain operation, thus increasing handling and transportation. A well-designed lay-out is shown in Fig. 1, and it will be seen from the indicating arrows that the job is always moving forward towards the delivery end.

The inside management should also have an authoritative voice in the question of the driving means to be installed, as in many instances the employment of small motors will materially reduce the yearly power bill. Take the case, for instance, in which a machine is only used intermittently and shafting is hung adjacent to it, such shafting being continuously at work, although the machine may be stopped for the best part of a day.

1. **Working Hours.**—The working hours should be fixed by the inside management. Most of the engineering firms of this country start work at six o'clock in the morning, with two breaks for meals, the first from 8 to 8.30 for breakfast, the second, in the middle of the day (being of an hour's duration), for dinner. A number of

firms, however, have adopted the one-break system. A fifty-two-hour week can be made by working from 7 a.m. to 12 a.m., and from 1 p.m. to 5.30 p.m. The latter arrangement has been well received, and is extremely popular with both manufacturers and operatives who have once tried it.

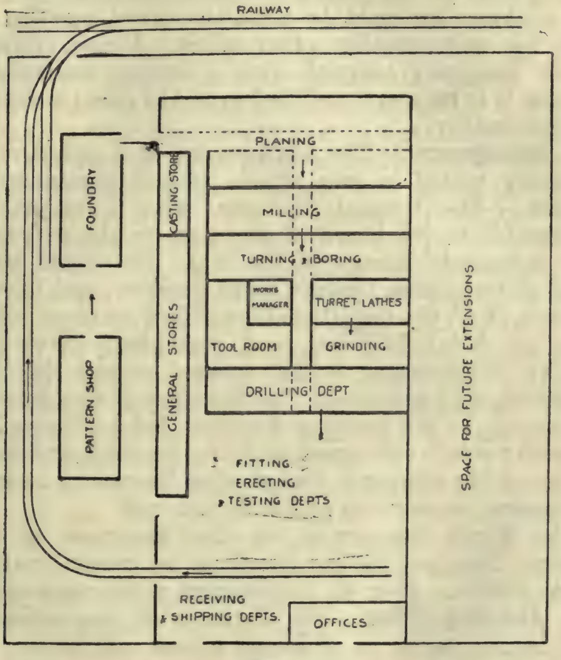

RAILWAY
PLANING
CASTING STORE
FOUNDRY
MILLING
TURNING & BORING
WORKS MANAGER
TURRET LATHES
TOOL ROOM
GRINDING
DRILLING DEPT
GENERAL STORES
PATTERN SHOP
FITTING ERECTING & TESTING DEPTS
SPACE FOR FUTURE EXTENSIONS
RECEIVING & SHIPPING DEPTS.
OFFICES

FIG. 1.

2. **Time-keeping.**—The system of time-keeping which can be best recommended is that in which cards are used in connection with a recording clock, starting and stopping times being printed or stamped on the cards.

At the end of the week, when the amount of wages is entered on it, the card is signed by the workman, and handed back as a receipt. No other system lends itself so well to an accountant's periodical check, to detect fraud in the payment of wages, as this. Where the workmen are paid by time, the vexed question of fines for unpunctuality often arises. A new system, which has been adopted with a certain amount of success, is to reverse the old order, and to offer premiums for punctuality.

3. **Management.**—The management of a company is generally vested in two offices, with a personnel as follows:—The General Manager, who is ultimately responsible to the board of directors for the technical and commercial success of the firm. He should be a good all-round man, trained as an engineer, and having a grasp of all the departments sufficient to know when they are being well run, and particularly having a weight of character which ensures respect for his leadership and decisions. The Secretary is also directly responsible to the board of directors, but his duties are generally solely concerned with the financial and legal affairs of the company, though they frequently include the general supervision of the clerical staff.

The Works Manager is the chief lieutenant of the General Manager, having charge of all manufacturing work, which is, after all, the business of the company.

4. **Drawing Office.**—The division of responsibility for design varies in different classes of work. In electrical firms it is the practice to have a staff of highly qualified men, termed designers, who conduct the technical correspondence, and settle the electrical dimensions of the machines. The responsibility for the mechanical details rests chiefly with the drawing office. In non-electrical firms it is more the custom for the chief draughtsmen to act as chief designers. When several varieties of machines are made, he is assisted

by senior draughtsmen who are specialists in their particular branches.

There is no branch of engineering where salaries vary so much as among draughtsmen.

It is, however, a mistaken economy to save money by employing semi-qualified men for important work in this department, as differences of several per cent. in the cost of a job are easily made in the design.

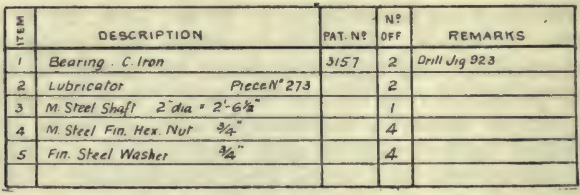
It is modern practice, and is indispensable in a large works, to fully detail every part of a machine. Generally a related group of parts is shown on one drawing, while some firms have a separate drawing for each piece for repetition work. The recommended standard sizes of drawings are about 26 in. by 38 in., 19 in. by 26 in., 13 in. by 19 in., and correspondence note-paper size for sketches. All drawings should be traced, so that blue prints may be sent to the shop. If many prints are to be made, a mechanical printing-frame with artificial light should be used, together with a system for drying the wet prints after development. With such an equipment a large print can be made, ready for dispatch, in about ten minutes.

Records of drawings are of two kinds—the serial number and the classified records. For the first, it is a good plan to have a separate series of numbers for each size of sheet, which makes filing easier, and also saves time finding drawings in the shop. The classified record is perhaps best arranged in the following way:—Every machine should have a list of its drawings made on semi-transparent paper, the list being properly titled, and giving the order number in which the machine was made. Blue prints from these lists are bound in expanding folders, so that, conveniently adjacent to each senior draughtsman, a record of all work of his section can be arranged. Every detail on a drawing should have an item number, and in a table in the corner of the drawing should be given full particulars of each item.

Any special jigs required should be marked in this table, a suitable form for which is shown in Fig. 2.

No jigs should be made without the issue of a tool number by the drawing office, as otherwise there is risk not only of duplication of jigs, but of mistakes in the shop after changes in design. Whenever several jigs are required for successive operations on the same piece, the sequence of the operations should be stated on the drawings.

Minor changes on drawings should be recorded by footnotes on the drawings, each footnote having a consecutive number. For more important changes a record print should be kept of the previous arrangement, and, of course, no drawings should ever be destroyed.



ITEM	DESCRIPTION	PAT. Nº	Nº OFF	REMARKS
1	Bearing . C. Iron	3157	2	Drill Jig 923
2	Lubricator Piece Nº 273		2	
3	M. Steel Shaft 2" dia × 2'-6½"		1	
4	M. Steel Fin. Hex. Nut ¾"		4	
5	Fin. Steel Washer ¾"		4	

FIG. 2.

All detail parts or groups of parts, which by reason of frequent use are made for stock, should have a distinctive piece or reference number.

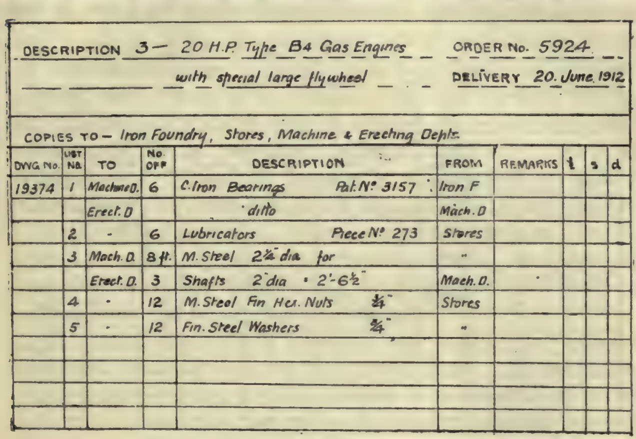
Patterns should, of course, each bear a number; and, in addition to the serial register of these numbers, all standard patterns, such as pulleys, gears, bearings, hand-wheels, etc., should be indexed together on card records.

Finished details or groups of details, which by reason of frequent use are made for stock, should have a piece or reference number.

All orders to the shop should be accompanied by a list, made up in the drawing office, of all material to be used in a job, even such stock details as nuts and screws being called for. Copies of this material sheet should go to all manufacturing departments concerned, and also to the works manager's office and stores.

A useful form of material list, which may profitably be reproduced by blue printing for standard work, is given in Fig. 3.

5. **Stores and Purchasing Department.**—The stores should be under the superintendence of the purchaser.



DESCRIPTION 3 — 20 H.P. Type B4 Gas Engines ORDER No. 5924

with special large flywheel DELIVERY 20. June. 1912

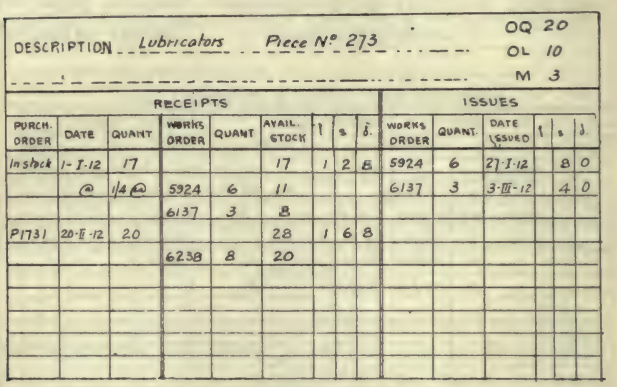
COPIES TO — Iron Foundry, Stores, Machine & Erecting Depts.

DWG. No.	LIST No.	TO	No. OFF	DESCRIPTION	FROM	REMARKS	£	s	d
19374	1	Machine D.	6	C. Iron Bearings Pat. No. 3157	Iron F				
		Erect. D		ditto	Mach. D				
	2	-	6	Lubricators Piece No. 273	Stores				
	3	Mach. D.	8 ft.	M. Steel 2¼" dia for	··				
		Erect. D.	3	Shafts 2" dia · 2'-6½"	Mach. D.				
	4	·	12	M. Steel Fin Hex. Nuts ¼"	Stores				
	5	·	12	Fin. Steel Washers ¾"	··				

FIG. 3.

On the receipt of a material list, the parts to be purchased outside will be immediately ordered, with suitable date of delivery. Other parts required, such as bar, nuts, bolts, and finished parts, will be entered on the stock card, for which a form is shown in Fig. 4. The commonly employed method of keeping accounts of stock in a ledger is nowadays considered inconvenient, owing to the greater difficulty of classification and handling; therefore a stock card, a good form of which is shown in Fig. 4, is employed as stated.

Lack of space prevents a detailed explanation of the entries on this card, but a careful study of its columns will be sufficient. Also the method of entering good stock returned to the stores on cancelled orders, and other such slight complications, present little difficulty. It is practically impossible that every card of the thousands required to keep the stock of an engineering works should always be exactly correct, except at an unwarranted expense in clerical labour. It is therefore *essential* for success that the stock cards be kept in the stores, where the stock clerk is in constant touch with the storekeeper. Cases are known where the stock cards are kept in distant cost offices, and there the system is a byword for inefficiency. In other cases, where the cards are kept in the stores, they are reliable and successful. The letters O Q, O L, and M at the top of the card indicate ‘order quantity,’ ‘order level,’ and ‘minimum.’ These quantities are fixed by responsible officers, and are afterwards observed by the stock clerk. When the available stock drops down to



DESCRIPTION Lubricators Piece N° 273

OQ 20
OL 10
M 3

RECEIPTS									ISSUES					
PURCH. ORDER	DATE	QUANT	WORKS ORDER	QUANT	AVAIL. STOCK	£	s	d.	WORKS ORDER	QUANT.	DATE ISSUED	£	s	d.
In stock	1-I-12	17			17	1	2	8	5924	6	27-I-12		8	0
	@	1/4 @	5924	6	11				6137	3	3-III-12		4	0
			6137	3	8									
P1731	20-II-12	20			28	1	6	8						
			6238	8	20									

FIG. 4.

the 'order level,' a fresh stock is ordered. If, before this order is completed, the stock drops below the minimum, the order must be actively hurried.

It should be noted that each item on the material list is given a number, so that, when a foreman requires certain material, he writes a brief note saying, in effect: 'Please give bearer material for Items............, Order N............' The storekeeper then refers to his material list, gives out the requested items, which are signed for by the bearer, and then hands the material list to the stock clerk, who immediately prices out these items. If this immediate pricing of the material is properly carried out, there is no reason why the cost of the job as it proceeds should not be turned into the cost office every day, as is described later. Naturally there are occasionally omissions from the material list, and in such cases the foreman must sign a special requisition to obtain this material. Stock required for plant repairs and extension, jigs, experimental work, and general supplies, such as waste, oil, and solder, will also be ordered on the foreman's requisition.

Of course there is a limit to the minimum value of material booked out on the stock card. It would be absurd to enter up a canful of oil or a handful of waste, but it is none the less essential that a stock card be kept for such supplies, showing how much is bought and at what price.

This system of storekeeping is not expensive to keep up, and is of untold value in a works of the size considered.

The total works cost of a job is an extremely important matter, and a scheme should be devised which will enable the works manager to ascertain the approximate cost of a job within a few hours. It may be thought that an organization to effect this is almost an impossibility; but there is, in the north of England, at least one very efficiently organized works where a system is employed that, although it has probably taken years to devise, is now worked smoothly and easily. Briefly, the system is operated on the following lines: To each job is given a letter and number, the former relative to the special class of work, the latter being in continuation of orders received. The letters also indicate whether the job requires fresh drawings, alteration of drawings or patterns, whether it is for a direct order, or for stock, or for a repair job. Each workman has two time-sheets—one used on Monday, Wednesday, and Friday; the other on Tuesday, Thursday, and Saturday. The workmen, with the supervision of the foremen, enter on their sheets the denoting letter of the job, a brief description of the article, and the time spent on the job. Several periods of time for different jobs may thus be entered on one sheet. The sheets for Monday are taken to the time-keeper's office—which in this instance houses a small but important staff—and on Tuesday the details are entered on to special forms, one form to each job. The materials necessary for the job are requisitioned on a form signed by the foreman and checked by the storekeeper. All material not used is returned to the stores, and credited. The storekeeper's sheets for Monday are delivered first thing on Tuesday morning, as in the case of the workmen's cards, and the details entered on the various job forms. Thus the amount of time spent on a job on a particular day, and the materials used on that day for the job, are entered on a sheet the following day. The rate of wages being known and the cost of materials, it is an easy matter to estimate the actual cost in labour and materials of a particular piece of work; while by adding a known percentage for shop costs, dead expenses, etc., the manager can estimate the total cost of the job, and thus fix his price or check his expenditure if the price has already been fixed. The general principle involves checking the time and labour on each job daily. Outside jobs—erecting—can be checked in a similar manner, and by constant watching much waste can be saved. In the foundry the floating labour cannot easily be accredited to any particular job, and therefore another system must be devised.

6. **Pattern Shop.**—Orders for patterns should go direct to the pattern shop, with instructions as to the class of pattern required.

Those who are familiar with the economy of machine patterns will err on the side of making them too frequently rather than too seldom, which is generally the case. While pattern-making is a handicraft, it is capable of being materially helped by a proper equipment of planing machines, band and circular saws, etc. Since the suitability of a pattern for its purpose has a considerable bearing on the cost of moulding, there must be particularly amicable relations between the foremen of the pattern shop and the foundry. The numbers on patterns should always be marked in raised figures, and a card record should be kept of all patterns. Patterns should always be inspected when returned from the foundry, and those made in combination should be examined by the checker before being sent out.

7. **Foundry.**—Orders for casting should be transferred on to a separate card kept for each pattern by the foundry clerk. At the same time, the pattern should be got from the stores and a tag fixed to it, giving the number of castings required and the delivery date, which makes it easy for the foreman to put work in hand.

It is customary to group most castings into three classes according to weight and cost of moulding, and to fix a uniform price per pound for each class. In the case of more difficult work, such as cylinders, the time of moulding should be taken, and the cost reckoned accordingly. Men whose training is not much higher than that of a casual labourer can be put on machine moulding, but such a section should be fairly well isolated from the rest of the shop to minimize grievances among the skilled moulders. For light work, girls are sometimes employed to make small cores; but, unless a foundry does an unusually large amount of such work, it is advisable to keep clear of female labour.

If a foundry is not large enough to retain a chemist, occasional analysis should certainly be made in outside laboratories.

The commercial efficiency of both brass and iron foundries can best be gauged by comparison of costs with outside prices, and there should be no hesitation in placing work outside occasionally when prices are lower. Foundries engaged in competitive work naturally get tuned to a higher efficiency than is readily attained by a non-competitive foundry in an engineering works.

8. **Machine Shops.**—It is here that congestion of work is most felt, and the attention of the works manager is largely concentrated on this department.

In arranging the shop, all machines should be grouped in sections, so that those of a similar class are together (see Fig. 1), the large machines being under the travelling crane.

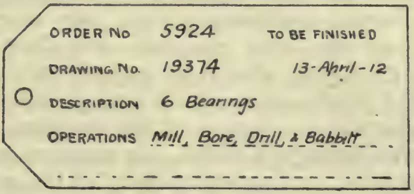
The route taken by the work should be planned so that all material progresses through successive operations in the machine and fitting shops to its ultimate destination in the stores or shipping department, with a minimum of transportation, as previously stated.

In some works it is customary for all castings to pass through a castings store, which retains all surplus stock, but more generally they are placed round the machines on which the first operation is to be performed.

The castings should always be accompanied by a delivery note in duplicate, *one note for each order number*, stating description, weight, and class for pricing. Instructions to the workman are best given on a tag, as illustrated in Fig. 5.

It may be remarked that repetition work will, of course, be done piecework, and special jobs day work. It is generally found advisable to have a small staff of specially trained piecework or rate fixers, the prices being recorded on cards for future reference. In addition to the work tag illustrated above, the workman is handed a job ticket, stating the piecework price, etc., on which the time taken by the job is entered, and which is finally passed to the wages department.

For accurate repetition work each piece should be gauged, and for small parts girls may be well employed, provided they are isolated and the work is in sufficient quantity to justify this arrangement.



ORDER No 5924 TO BE FINISHED

DRAWING No. 19374 13-April-12

DESCRIPTION 6 Bearings

OPERATIONS Mill, Bore, Drill, & Babbitt

Fig. 5.

9. **Fitting and Assembly Shop.**—As in the machine shop, piecework should always be arranged for repetition work; and frequently on large assembly work it is an advantage to make contracts with the leading hands, who share out the bonuses in proportion to the rate of wages and time worked by their helpers.

After assembly all work should be inspected, and, where necessary, tested before shipment, the responsible officials signing inspection sheets, which are filed for future reference.

10. **Tool Room.**—This department should be particularly convenient for the machine shop, and almost equally so for the fitting shop. Like the stores, it should be fenced with netting. It generally contains

blue prints for the shop, small tools and gauges, jigs, jig and tool makers with the necessary machine tool equipment, and also the jig draughtsman. The blue prints should be mounted on boards, and, like small tools, only given out on check.

Whatever standard small tools are served out to a workman, they must be recorded, as a check on what he returns on leaving. Any tools worn out or broken should only be replaced on receipt of the old ones, together with a note signed by the foreman.

When a turner is given a set of turning tools, these would, of course, be exchanged at the tool room for new ones, as required, without the formality of a signature.

All gauges and jigs should be periodically checked, and absolutely condemned when the inaccuracy is greater than the fixed amount. All drills, reamers, milling cutters, etc., should be ground only in the tool room. The jig draughtsman is best placed in the tool room, under the supervision of the foreman.

11. **Works Manager's Office.**—In addition to engineering supervision, an important duty of the works manager's staff is to see that delivery dates are kept. The importance of keeping deliveries cannot be too strongly urged, and is best accomplished by having certain men whose sole duty it is to keep track of orders. It is not the duty of these production men or 'chasers' to in any way interfere with the duties of the foreman, but to advise the relative urgency of the orders, and see that all the components of an order reach the fitting shop in time. 'Chasing' is to a large extent useless unless well backed up by the authority of the works manager. The amount of work normally in hand in each department, especially in the feeder departments (for example, the foundry and machine shops), in a general sense governs dates. If the average delivery dates on orders is, say, three months, the number of weeks' work each department should have in hand can be roughly fixed.

It is, then, most strongly recommended that the works manager should make it his special business to see that the proper amount is not exceeded, rather than to hurry personally the particular orders which are for the time being deemed urgent.

Exceptional efforts should be made to prevent congestion of work in any department, even to the extent of putting work out or starting a night shift.

The bearing which quick progress of work through the shop has upon the earning capacity of the circulating capital is too seldom fully realized. Financial embarrassments are generally the result of contraction in the circulating capital, due to trade depression or certain specially unfortunate contracts. The reduced circulating capital is then sometimes temporarily unable to bridge the period between the payment for purchases and of wages on the one hand, and the receipt of money from sales on the other. It is difficult, without incurring reflection on the credit of a company, to defer its own payments or unduly press its trade debtors. If, however, by careful organization of manufacture the amount of work in progress, which represents tied-up circulating capital, can be reduced, temporary difficulties may be bridged over.

This reduction of the ratio of work in progress to total turnover should always be kept well in sight, for its advantages are threefold. They are: a certain reduction in the cost price per machine; a reduced capital for a given turnover; and increased business, due to prompt delivery.

12. **Factory Expense.**—The allocation of a proper proportion of the factory expense to each order is a practice in which there is a very wide difference of opinion, and its proper exposition is too long a task to undertake here.

One often hears it stated that a works making large and small machines of a certain class is unable to make, say, the small machines pay. An investigation of such cases would often show that the trouble was due to a wrong apportionment of the factory expense, by which the small work was charged too much and the heavy work too little.

It may be stated that it is generally considered inaccurate and obsolete practice to distribute the factory expense in proportion to the cost of material on machines, or even in proportion to the total cost of a machine, as that is equivalent to placing a certain amount on material.

The more general practice in engineering works is to divide the factory expense as a percentage on wages, making certain differences according to whether the work is machining or fitting, etc.

With either of these systems the variation in the ratio which the almost constant factory expense bears to the wages or output, which fluctuate considerably, causes variations in the apparent cost of a given machine according to whether it is built in slack or busy times. Further, there may be undesirable discrepancies between different classes of machines, as instanced above.

A system adopted by certain progressive firms shows the bearing of state of trade and certain other important factors on the total cost price. Briefly described, a certain portion of the factory expenses is charged at a fixed amount per hour of labour, whether the worker be a tradesman, labourer, or boy, and whether the works is busy or slack. A certain other portion is charged at a fixed amount per hour for each machine according to its class, again quite irrespective of the state of trade.

When the works is fully employed, these two rates absorb all the factory expense. In times when the works are not employed up to full capacity, the unabsorbed balance of these rates makes what is called a supplementary rate, which is allocated among the men who are employed and the machines which are working during the relatively slack time.

The charge on orders from the supplementary rate, although included in the final cost of the output, is clearly distinguished, so that the amount by which the costs vary according to the state of trade is clearly separated from variations caused by more or less efficient work. This system has many advantages, and is worthy of serious consideration.

The following list of books may be found useful as works of reference in relation to Factory Management :—

13. **Bibliography.**—Francis C. Burton, *The .Commercial Management of Engineering Works* (Manchester: The Scientific Publishing Co.). Emile Garcke and J. M. Fells, *Factory Accounts* (London: Crosby Lockwood and Sons, Stationers' Hall Court, Ludgate Hill). Arthur H. Barker, *The Management of Engineering Workshops* (Manchester: The Technical Publishing Co., Ltd.). Charles H. Carpenter, *Profit-making in Shop and Factory Management* (New York: Published by the *Engineering Magazine*). H. Spencer, *The Commercial Organization of Engineering Factories* (London: E. and F. N. Spon). R. Grimshaw, *Modern Workshop Hints* (London: Sampson Low, Marston, and Co., Ltd.).

F. N.

Factory System, Origin of. See INDUSTRIALISM, HISTORY OF.

Factories, Heating of. See FACTORY CONSTRUCTION.

Factories, Lighting of. See FACTORY CONSTRUCTION.

Factories, Sanitation of. See FACTORY CONSTRUCTION.

Factories, Ventilation of. See FACTORY CONSTRUCTION.

Feudalism. See LABOUR.

FRIENDLY SOCIETIES.

1. *History.*
2. *Types of Society.*
   (1.) *Affiliated Societies.*
   (2.) *Centralized Societies.*
   (3.) *Local Societies.*
3. *Women's Societies and Female Membership.*
4. *Juvenile Societies.*
5. *Numerical and Financial Strength.*
6. *Relation of the State to Friendly Societies.*
7. *Bibliography.*

1. **History.**—There is no question that the branch of mutual thrift known as the Friendly Society Movement was originally the outcome of a need felt by the ranks of the poor (as the industrial classes used to be called) after the losses sustained by the wholesale suppression of the religious Gilds of the Middle Ages, which was carried out in the first year of the reign of Edward VI., under the cloak of religious reform. It was the beginning of the 'great pilage' inaugurated by the council of the boy king. For example, the rules of the Gild of St. James the Apostle, Garlickhithe, London (1375), required an annual subscription of 2s. from every member, besides which free gifts were devoted to the maintenance of the 'brethren and sustren' (sistren) at the quarterly meetings. The sick and disablement benefit was provided for as follows: 'If any of the Brotherhood fall in such mischief that he hath nought, nor for old age, and for other mischief of feebleness is unable to help himself, and has dwelled in the Brotherhood seven years, he shall have from the Common Box 13d. every week for the term of life or until he be recovered.' The 13d., in present money value, would mean 10s. a week.

These Gilds were spread all over the country, so that there was scarcely a rural village that did not possess its Gild-house and lands in connection with the parish church. Defoe, writing in 1697, has much to say in support of Friendly Societies, as the successors of the Gilds, though not a single good word for life insurance; and it is evident from his article on the same, in his *Essay on Projects,* that these societies had already gained recognition, and that their value had begun to be realized, as an association of 'a number of people entering into a mutual compact to help one another in case disaster or distress should fall upon them.'

Of the 300 Friendly Societies that were centenarian in 1905, some half-dozen date back their foundation prior to Defoe's essay, while two-thirds of the 300 belong to the eighteenth century. Nearly all of these are of the local type, but, under changed conditions of labour, they are yearly declining in number. One of the first applications of this principle of combination as an insurance against losses was that of seamen, especially those belonging to the merchant service, for whom little or no provision was made. Among the survivals, though in greatly reduced circumstances, we have the United General Sea Box of Borrowstounness Friendly Society (1634). Another society, better known to history, is the Incorporation of Carters in Leith, which was instituted before Queen Mary landed at the Port of Edinburgh from France, and engaged the services of the Incorporation as a means of transport to Holyrood.

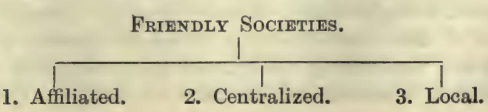
The oldest registered society in England is the 'Friendly Benefit Society held at the "Norfolk Arms," Ivimey Street, Bethnal Green' (1687). It owes its origin, as does the Society of Lintot and that of Normandy, to the revocation of the Edict of Nantes and the consequent demolition of the Protestant churches in France. The members of the one were refugees belonging to the church of Lintot; the members of the other fled from High and Low Normandy.

The surviving societies of the eighteenth century were all enrolled under the first general Act for the protection of such bodies, known as the 'Rose Act' (1793), the above two being respectively No. 3 and No. 2 on the first register. It is only just to the Gilbert Act of 1782 to state that it was the intention of its promoter to confer similar privileges and immunities for the encouragement of Friendly Societies as those subsequently contained in the later enactment. The good side, however, of the earlier piece of State socialism was whittled away in its course through Parliament. As the 'Rose Act' conferred by law on societies the chief privileges and exemptions which they have enjoyed for close on a hundred and twenty years, and to which certain objection has recently been made, it is necessary to enumerate them: exemption from fees upon enrolment (at Quarter Sessions), from stamp duty on bonds; summary proceedings to recover funds from defaulting officers and trustees; priority of claim for moneys on assets of deceased or bankrupt officers, etc.; settlement of disputes by arbitration without recourse to the law; and exemption of members from operation of the old law of parochial settlement, until they become actually chargeable to the parish. This Act became the basis of all further legislation.

A marked feature belonging to the eighteenth century was the prevalence of female membership in ordinary societies, as well as the establishment of numerous societies for female members only. Eden (*State of the Poor*, 1797) states that women's benefit clubs were common in his day, but that they were, even then, on the decline. The inequality of legal protection operated adversely in the case of married women, since they were unable to hold property. Either the husband appropriated the wife's benefits—the investment of her own earnings and forethought—or allowed her no voice in the disbursement of her benefits. As a consequence, for example, the benefit clubs of women lace-makers and weavers, scattered throughout the country, died out. The same may be said of male clubs, owing to their bad finance. The latter, however, sprang up again in stronger forms, while the former continued for eighty years longer to be so handicapped as to arrest all attempts at permanent revival; yet, in spite of unequal treatment, nineteen existing female societies are centenarian, the oldest dating back to 1780.

The eighteenth century also saw the birth of the secret Orders or Fraternities (see later). The Independent United Order of Mechanics was established in 1766, the United Ancient Order of Druids in 1781, and in Scotland the Order of Free Gardeners in 1715. There was also the Order of Gregorians in England, but it has disappeared, together with the two oldest Unities of Oddfellows — the Loyal Ancient and the Loyal Patriotic. Both were 'loyal,' only the one drank to the 'king over the water,' and the other to 'King George.' Wilkes and Sir George Saville were members of a lodge of Oddfellows which was obliged to close its doors, owing to the violent political speeches made at its meetings by the former against the Government. There were also Foresters of the Royal Order (the parent of the existing Ancient Order), and the Order of the Golden Fleece (Bradford), founded by German workmen who introduced the stuff trade into England.

2. **Types of Society.**—Passing on to the nineteenth century, the Friendly Society system of mutual thrift had so far been developed as to require classification according to types, as follows :—



The general distinction between the collective Friendly Society or Benefit Club and the individualistic Savings Bank is well put in the Report of a Select Committee of the House of Commons (1825):—

> 'Whenever there is a contingency, the cheapest way of providing against it is by uniting with others, so that each man may subject himself to a small deprivation, in order that no man may be subjected to a great loss. He upon whom the contingency does not fall does not get his money back again, nor does he get for it any visible or tangible benefit; but he obtains security against ruin, and consequent peace of mind. He upon whom the contingency does fall, gets all that those, whom fortune has exempted from it, have lost in hard money, and is thus enabled to sustain an event which would otherwise overwhelm him.
>
> 'The individual depositor, not the contributor to a common fund, is really the speculator. If no sickness attack him during his years of strength and activity, and he *dies* before he is past labour, he has been successful in his speculation; but if he fall sick at an early period, or if he live to old age, he is a great loser. For his savings, with their accumulations, will support him but a short time in sickness.'

(1.) *Affiliated Societies.*—The first type consists of societies with branches, affiliated to a central body of control, having a strongly democratic constitution. These branches, according to the nomenclature adopted, are designated lodges, courts, tents, or senates; the two last terms belong respectively to the Rechabites and the Romans. These purely local bodies are associated one with the other in districts, and these latter, in turn, are directly connected with a central authority or unity. Leaving the financial aspect for separate treatment, this, the most highly developed type of mutual thrift combination, suffered many things during the first half of the last century at the hands of the law and the Government. Legislation, which directly concerned the action of the State towards Friendly Society combinations, did something to extend its protecting arm, especially by means of an Act of 1829 (10 Geo. IV.

c. 56, supplemented by an enabling Act of 1834—4 & 5 Will. IV. c. 40). The provincial system of enrolment was superseded by a centralized system of registration in London, Edinburgh, and Dublin. But the safeguards given under the Government stamp were injuriously diminished. Societies were left to adopt what rules they liked, and whatever tables of contributions and benefits they chose. This reversed policy was the unfortunate result of allowing societies to be formed and to do business without complying with the stricter requirements of enrolment under the Act of 1819. Instead of making unregistered societies illegal, the obligations in return for the privileges and immunities offered by the Government were weakened, in the hope of increasing the number that would thereby be induced to voluntarily register.

Meanwhile the Orders, with their secret signs and ritual of initiation and degrees (after the fashion of the Freemasons), were hard hit by the reactionary social legislation of the new century. The State socialistic measures of the close of the eighteenth century, adopted in fear of the influence of the French Revolution, had given place, now that fear had passed, to repressive and arbitrary enactments directed against attempts at combination for common interests on the part of the labour classes. The principles of Friendly Societies and their tendency to keep down the poor rates, were praised by Parliamentary Committees and in preambles of Acts of Parliament, and commended so long as these bodies kept to strictly local and isolated forms. When, however, the Oddfellows and similar societies with branches began to extend themselves throughout the country, the Seditious Meetings Act (under which a meeting of more than fifty working men was not permitted) and the Corresponding Societies Act were put in force. Lodge and court meetings were broken up by the police, on the evidence of paid informers.

Even when, in later years, the full force of these Acts had been broken, Mr. Tidd Pratt, the famous Registrar of Friendly Societies, did his utmost, during a forty years' term of office, to arrest the growth of the Orders, as being dangerous organizations of the working classes, self-governed, democratic, and incompatible with the operation of State control and supervision. So late as 1848 a report was issued, written by the Registrar, in which Mr. Tidd Pratt declared that the Order of Oddfellows should not be entitled to the benefits of registration until their rules were deposited, and a declaration made 'setting forth that no secret sign or password will henceforth be used by them, that no lectures shall be circulated among them or read at their places of meeting, and that no burial service shall be used by them at the interment of their dead;' while at the same time the Registrar refused to register any branch of an affiliated Order, except as a separate society, and declined to pass any general rules that, as such, should be 'binding on every branch and member.' Consequently a large number of branches delayed registration altogether, rather than register as mere unincorporated local units. The type, however, continued to increase in numbers and wealth during the first half of the last century. Among the principal societies were several Orders of Oddfellows (led by the big brother of the Manchester Unity), the Ancient Order of Foresters, the Loyal Order of Ancient Shepherds, Ashton Unity (1827), the Independent Order of Rechabites, Salford Unity (1835), two large Orders of Druids, the National United Order of Free Gardeners (strong in Scotland), the Sons of Temperance, the Philanthropic Order of True Ivorites, St. David's Unity (Welsh), and the Locomotive Steam Enginemen and Firemen's Friendly Society. There is also, down to present date, a sprinkling of Orders of Britons, Romans, and Saxons. It will be noted that two of the above-mentioned are restricted in membership to those who take a temperance pledge.

(2.) *Centralized Societies.*—A development of the old-fashioned local club, to meet the rivalry of the Affiliated type of society, and to offer an extended range of membership without local as well as central expenses of management. They may be subdivided into (*a*) General and (*b*) County or Semi-county, with the common characteristic of centralization of funds as well as management, all business being transacted at headquarters, or passed on to the same. (*a*) The General subdivision, with one marked exception, originated in London, out of the need of small tradesmen and the upper rank of skilled artisans for something better than local societies of the public-house type. The two oldest are the Royal Standard (1828) and the London Friendly (1824), to be followed within the next twenty years by the Hearts of Oak (1842), the Rational Sick and Burial Association (1837), and the Patriots' National Benefit Society (1843). The Hearts of Oak stands out as the big brother among this group, as the Manchester Unity and the Foresters among the Affiliated societies. It is restricted in its recruiting fields, since what are known as hazardous or unhealthy trades are debarred. Also the uniform sick benefit insured is 18s. per week full pay. The United Patriots, on the other hand, supplies in its different scales of benefits the need of all classes of the industrial community—a ladder of many rungs. Provision is made in both these Societies for insurance against loss by fire of tools and implements. The Patriots have set up local paying in and out agencies; while the Hearts of Oak carries on all business at its office in Euston Road through the post. The Rational Association merits a special notice, as being a permanent outcome of the life and work of Robert Owen, of New Lanark, in connection with his proposed 'Villages of Harmony.' After making provision for the usual Friendly Society benefits, and a fund for distressed brethren, the founder, in his preface to the first book of rules, adds a special further object: 'By applying the surplus stock or funds for the purchase or rental and cultivation of land, whereon to establish a hospital or home for the reception of the sick and superannuated members, or for the purchase or rental of dwellings or other buildings wherein the members shall, by united labour, support each other under every vicissitude.' Several of these 'homes' were carried on for a number of years; the last, we believe, was one situated in 'the Garden of England.' This society has fully formed local branches, though all funds are central. One centralized society has taken the specialized form known as the 'Deposit.' As an insurance system, it was founded by the Hon. and Rev. Samuel Best, Rector of Abbotts Ann, Hampshire, in 1831. The idea, the founder stated, was of 'a savings bank rather than a club.' This combination of a benefit society and a savings bank, by means of which each member's payments remain his own, though part of a fund for common purposes, is an attempt to unite individualism and collectivism, without sinking the former principle. The method is complicated through the number of separate classes and involved finance. Provided members are careful not to withdraw or unduly diminish the amount of their personal 'deposit' or 'rest,' the system has been useful so far as it goes, especially for persons in domestic service and others who do not feel the need of the social club element. It can never, however, attain to the security of a fully fledged Friendly Society, which periodically undergoes the valuation test. Several county societies (see *infra*) partially took up this method, and the Surrey County worked entirely on the principle. This Society ultimately grew into the present National Deposit Friendly Society, which receives great support from the patrons of the working man's and woman's thrift.

Within this group fall Railway Company Societies and Miners' Permanent Relief Funds. These peculiar trade associations are subsidized by the employers, who in return exercise powers of control and of veto. The Railway Societies extend over most of the lines, while those of the miners are confined mainly to the north and the Midlands. Outside specialized associations the general group of the Centralized type has not increased in societies (which are few in number), though there has been a steady growth in strength of membership in recent years.

(*b*) The County and Semi-county group has done good work in the past. The societies composing it are generally of the patronized character, and in the main peculiar to the agricultural population of the south and east. They have been 'invariably established not by the working classes, but for them.' They emanate from the county landlords, justices of the peace, and guardians of the Poor Law, with a view to improving the thrift of the rural working classes and relieving the poor rates. The one drawback to the good work done has been the tendency to foster a growing habit of dependence on superiors, instead of cultivating self-reliance and strengthening individual character and initial power. They have not been educational, and to this day the members, as a rule, remain largely ignorant of the principles of sound working and finance. The first formed was the Essex Provident (1818); then followed the Hampshire (1825), the Wiltshire Friendly (1828), and the County of Kent (1828). The first of the three last stands *facile princeps* in both numbers and finance. With the position attained by the Society, the late Mr. S. Wyndham Portal, D.L., must be associated, and with that of the kindred Society of Wiltshire, the late T. Sotheron Escourt, M.P. In addition to a few more smaller associations which cover a whole county area, there are a number of Semi-county societies of a similar type.

Among the oldest there rank the Dunmow Friendly (1832), the Margaret Roothing and District Friendly (1834), the Aldham and United Parishes Assurance (1826)—an East Anglian group—besides the North Devon, North Somerset, South Bucks, and West Suffolk; while one of the most successful and beneficial in results is the Stoke and Melford Union Association.

A considerable number of particular trade societies should be added, better known as shop clubs, which are too numerous to mention individually. Societies, however, like the Clergy Friendly, and other religious denominational bodies, stand apart by themselves.

(3.) *Local Societies.*—Certain political societies should be classed here, such as the Stroud Working Men's Conservative Association Benefit Society, and its Liberal imitators. This outside distinction in offering benefits to working men is not desirable. Thrift knows no particular political colour, and will not be widely expanded upon the Holloway principle (founder of the system, Mr. George Holloway, once M.P. for the Stroud Division). Local societies may be subdivided into town and village. The former consist in the main of local particular trade societies and dividing societies; while the latter are generally, whether dividing or not, unfinancial in their methods, existing often, in the first place, for the good of the public-house or beer-house at which the members meet, and paying in the past more than in the present 'wet rents.' In Scotland, however, no societies meet on licensed premises. It is only just to add, as regards England and Wales, that, though the vast majority of purely local societies have failed their members in the day of strain and passed to their long home, there still exist a number of survivors which justify their survival, though the bulk of young recruits now take their contributions elsewhere. In Ireland the Friendly Society system of thrift has not greatly flourished, though the Foresters, with their woodland green insignia, have done the best.

3. **Women's Societies and Female Membership.**—There is nothing in the rules of the vast majority of societies against female membership, but as a rule men only have been hitherto admitted. In the case of the male Orders, however, equal thrift rights were not, as a rule, granted to women until the close of the last century. Towards the end of the first half of that century there was a revival of Women's Friendly Societies, and in 1870 they existed in 35 out of the 52 counties of England and Wales—in largest membership in Lancashire, Durham, Leicestershire, Staffordshire, and Derbyshire, as also in Bristol and the straw-plaiting districts of Bedfordshire and Hertfordshire. Women, shut out of participation of benefits in the large and old-established male Orders, proceeded to start female Orders for themselves—for example, Odd Sisters, Odd Females, Loving Sisters, Female Foresters, Female Druids, Ancient Shepherdesses, Comforting Sisters, etc. These secret societies of women, however, did not last long. They soon began to dwindle away, while their financial arrangements were never sound. Too much money was spent in drink—2d. at each monthly and 6d. at each quarterly meeting; while a limited morality rule was generally the only one enforced—for example, 'any member . . . having a child by another woman's husband shall receive no benefit whatsoever, but be excluded. Any married woman having a child by any man but her own husband, the same.'

The Rechabites did open female tents, but the members of them exhibited so much independence and so little respect for finance that they were quickly closed down. The general aspect of the male Orders towards the movement is shown in the following old rule of the Manchester Unity: 'That any brother of the Independent Order who shall be found guilty of assisting any secret society of women, or attending their meetings, shall be suspended twelve months for the first offence; and for the second offence, he shall be expelled the Order for ever. Any lodge lending any part of their regalia to any secret society of women, shall for the first offence be suspended six months; and for the second offence, be expelled the Order.'

Factory and shop clubs have always existed, but the existence has been poor, and the methods of insurance, generally speaking, very imperfect and unsatisfactory.

Some local societies of women remain, but few in number. One still, we believe, not far from Nottingham, assembles in the sanded parlour of a wayside inn, and the members still take their 'pints' and smoke their 'churchwardens.'

In 1884 the present writer took measures, in concert with the leading officers of the male Orders in Long Melford, Suffolk, to found an Order, giving equal thrift rights for women workers of all grades. The first court of the Society, called the Order of United Sisters (Suffolk Unity), was opened in the beginning of 1885, for women only. Leading economic and social workers among women, such as the late Miss L. Hubbard, the late Constance, Lady Lothian, Mrs. Peile, Mrs. Creighton, Mrs. Marshall, Miss Spiller (Bridgwater), the late Mrs. Cowen (Nottingham)—above all, the able and devoted late president, Miss Hargood (Cambridge), and many others, gave essential aid to the cause. The leading women of Cambridge came to the rescue in an early day of strain. It now has seventeen branches in England. Hence those rights which women held in the mediæval Trades Gilds, and which they had a hundred years ago, were at last fully restored to them. The membership of female benefit clubs was then not 20,000, out of a host of women workers exceeding 4,000,000. In consequence of this pioneer work, the large male Orders, at the close of the century, proceeded to admit females either by separate branches or into existing male branches. The principal Orders now admitting women as well as men are: the Ancient Order of Foresters, the Manchester Unity of Oddfellows, the Loyal Order of Ancient Shepherds (Ashton Unity), the Rechabites, and the Sons of Temperance. The Foresters took the lead, and opened female courts giving full rights of membership and representation at their annual parliament (High Court meeting). Among the most prominent to carry the revolution in the Order were Miss Edith E. Page (Norwich), Mrs. Watkin (London), and Miss Haldane (Edinburgh), sister of Viscount Haldane. The Manchester Unity till within the last few years only allowed female societies to be formed which were separate from the Unity, and had neither part nor lot in its prestige and premier financial position, and were, consequently, without representation. The Shepherds, the Rechabites, the Sons of Temperance, and a few other Orders revived an old right and adopted a forward policy. Lady Henry Somerset was among the first women's representatives at the High Movable Conference of the Order of Rechabites. The Government official returns state that there are 312 Friendly Ordinary Societies composed of women, with a membership of 48,381, and accumulated funds to nearly £195,000, besides about 2,000 members in the female Orders. This is misleading, since 90 of the 312 are either dividing societies, giving no permanent sick benefits, or else burial societies outside the proper range of Friendly Societies. The total number of insured women is put at upwards of 600,000—a figure which, we believe, should be very considerably reduced in size.

4. **Juvenile Societies.**—In the 'seventies juveniles came to the front. The two giant twin Orders—the Foresters and the Oddfellows (Manchester Unity)—had established juvenile courts and lodges thirty years before; but this early setting up of thrift nurseries to the adult branches was carried out in the face of the vehement opposition and criticism to which most new

movements are subjected. These 'adult courts in miniature' had to work their way to success. This obtained, the movement became general among the larger Affiliated and Centralized Societies, and juvenile membership increased by leaps and bounds. County and Semi-county Societies did a little towards it; Local Societies scarcely anything at all. The new order of things did not reach them till very late. 'Like the blocks of hewn stone prepared beforehand for their positions in Solomon's temple, our juveniles, on being transferred to the adult branches, take their several stations aptly and firmly in the grand building, the foundations of which were laid by brethren who have since been called to their rest.' Till recently, however, progress has been handicapped by legislation, since the collecting societies and industrial life insurance companies registered before 1876 were enabled to enrol as members or policy-holders children of one day old; while Juvenile Friendly Societies, being registered after that date, could not admit them under three years of age.

5. **Numerical and Financial Strength.**—Unfortunately, since so frequently quoted, the official returns of the Registry Office in Abingdon Street, Westminster, cannot be received as being even approximately correct. Tables are given below.

FRIENDLY SOCIETIES, 1886–9.

	No. of Members.	Worth of Funds.
Ordinary Friendly Societies:		
U.K. Blue-books (allowing for societies not making returns)	2,380,320	£ 10,077,196
Returns made to writer, with assorted returns to Blue-books (see Frome Wilkinson's *Mutual Thrift*, pp. 161 *et seq.*)	1,878,536	5,892,820
Difference . . .	501,784	4,174,376

	No. of Members.	Worth of Funds.
Societies with Branches (Orders):		
Special returns to writer (see *Mutual Thrift*, pp. 161 *et seq.*)	2,216,160	14,892,800
Blue-books.	1,399,187	9,832,179
Difference . . .	816,973	£5,060,621

FRIENDLY SOCIETIES, 1906, 1908, 1909.

	Societies (No. of Returns).	No. of Members.	Worth of Funds.
Ordinary Friendly Societies:			
Blue-books, Appendix (N), December 31, 1906	6,773	3,226,672	£ 18,056,640
Blue-books, December 31, 1908	6,518	3,473,712	20,009,658
Blue-books, December 31, 1909	6,368	3,526,639	20,987,352
Societies with Branches (Orders):			
Blue-books, Appendix (N), December 31, 1906	20,144 [167]	2,673,246	23,378,572
Blue-books, December 31, 1908	20,813 [about 170]	2,704,404	26,378,572
Blue-books, December 31, 1909	20,728 [about 170]	2,703,607	27,167,535
Returns made to National Conference of Friendly Societies, December 31, 1909 .	34	3,282,772	33,332,789
Excess of Blue-books .		579,165	£6,165,254

While allowing for corrections of the writer's figures (arrived at without the help of even a single clerk, and having largely to do clerks' work at the official figures, so far as totals go), there must be something 'rotten in the State of Denmark.' In the rough, the Government

Official Department of the Friendly Societies in 1886–9 credited ordinary societies with half a million more members than they possessed, and £4,000,000 excess in wealth of funds; while at the same time depriving the Orders of over three-quarters of a million of their members and £5,000,000 of their money. It looks, indeed, as if the over-credit given to ordinary societies at the expense of the Orders had not been made large enough. But the Chief Registrar's reports are in the main guess-work. In his abstract of the quinquennial returns, 1881–5, he states that 44·6 per cent. of ordinary societies made none of the five annual returns required by law, and consequently makes large allowance for non-returning societies. But the Office had no arrangement by which it could distinguish between the quick and the dead, and the majority of the 44 per cent. had long ceased to exist, save in names on a register fifty years old. In Russia a man, when he dies, sends his compliments to his friends, and informs them of the fact. Could not something of the sort be done by way of information given to the Office? The proportion of the *unawakable dead* may be estimated at *four-fifths* of *bona-fide* ordinary societies. Again, the public is warned that it must be clearly understood that the publications and abstracts of the same 'do not extend to the Affiliated Orders, with their numerous branches,' but only concern ordinary societies. Turning over the pages of *Lists of Societies, other than Societies with Branches*, we find in Reports, 1886, Parts II., D. 103–III., no less than 93 titles of Orders. Each page contains an average of 48 societies, out of which at least 27 are branches of Orders, and in some pages only 10 societies out of 48 have any right there. This is one result of Mr. Tidd Pratt holding that the branches of the Orders should not be legally considered as such, but as separate bodies. Yet, when one of these 'separate' bodies tried to maintain its isolated position and not obey the general rules of the Order it belonged to, the Supreme Court of Appeal, in the year 1886, put an end to such claims by ruling that the said Society 'had no separate existence to protect' (*Scholfield and Others* v. *Vanse and Others*, April 6, 1886). Yet, by a strained interpretation of an Act of 1855, the *Government Office deprives the Orders of over three-quarters of a million of their members and* £5,000,000 *of their accumulated funds*, thereby making ordinary societies the larger of the two classes of mutual thrift associations.

Turning to 1906–9, so far as societies with branches are concerned, the task of discriminating still appears hopeless. Firstly, the Government official returns give the number of branches, instead of the number of Orders or Unities; secondly, though the true number is about 170, correct returns made to the Secretary of the National Conference of *only* 34—*one-fifth of the whole—show an excess of over half a million members and over six millions' worth of funds.* Only the smaller Orders are outside the one-fifth. Not only, however, are they credited with neither members nor funds, but the figures show that even the 34 alone out of the 170 have been deprived of over half a million of their own numerical strength and six millions of their own financial strength. It follows that ordinary societies are credited with large excesses of members and funds not belonging to them. These misleading official figures have been used all over the country, and been taken in good faith by the public.

The statistics given of ordinary societies are inclusive of dividing or slate clubs and Tontine societies, which do not insure permanent sick pay as well as funeral benefits. There has in recent years been a revival and large increase in societies not giving permanent sick pay, but dividing their funds every year or every few years. In cases of prolonged sickness, an advance is made out of the death benefit, which, being thus anticipated, is known as the process of 'burying alive.' Tontines flourish mostly in Ireland, and in England in the north and Potteries. These are associations which grant benefits on lives on the loan system, the shares increasing as the members die off, till the last survivor gets all. The system was originated by Lorenzo Tonti, an Italian (1653)—hence the name. Dividing or sharing-out clubs of one sort or another will continue to flourish, as supplying a widespread need among the working classes, until a regular system of People's Banks has been inaugurated. The thoroughly developed Friendly Society gives sickness pay sufficient, short of invalidity, to cover all risks; a small sum at death in the form of funeral benefit; while a small percentage of members further insure for superannuation or a deferred annuity at sixty-five or seventy. Friendly Societies, however, except in the case of small societies, generally of the patronized or subsidized types, in original intention were only meant to provide for pecuniary losses during the working period of industrial lives, and at the outset were convivial, charitable, and benevolent rather than economic and provident.

In order to disburse the sickness benefits, it became necessary to add a medical benefit in the form of a club doctor, who attended and gave treatment to the sick members, and also provided medicines and drugs at so much per head. The sum received per head for this contract practice varies from 3s. to 5s. or 6s., and 4s. per member per annum would be above the average. In process of years the old close, personal, and friendly relations between the club doctor or surgeon and all the members of the society or branch became altered, and grew more strictly professional only. Complaints about treatment arose on both sides. As a consequence, the societies in the cities and larger towns began to form, forty years ago, an amalgamated system of Friendly Societies Medical Associations. These employ their own medical men, provide their own dispensaries, and supply their own medicines and drugs. One great advantage is that in these Associations the wants of the wives, children, widows, orphans, and relatives dependent on the members, are provided for. The management is in the hands of delegates elected to represent the constituent societies. These Associations have done much to improve national health, as well as raise the class of medical treatment which members of single societies too often received, owing largely to an inadequate method of payment.

In connection with medical benefit, the leading Friendly Societies have attacked consumption, the terrible 'white plague,' which is still devastating the ranks of industrial life, and subscribed to sanatoria on behalf of their members. The Manchester Unity, among others, have been forward in making this provision, nearly five hundred cases being treated within the last four years. The Ancient Order of Foresters have also done a good deal. It is found that 15 per cent. of deaths is on account of tuberculosis, and nearly 30 per cent. of sickness.

We give particulars of four Orders and three Centralized Societies which have a numerical strength of six figures :—

	No. of Adult Members, U.K.	No. of Wives and Widows.	No. of Juvenile Members.
Independent Order of Oddfellows (Manchester Unity)	753,687	13,767	128,267
Ancient Order of Foresters .	613,417	404,731	139,498
Independent Order of Rechabites	216,289	20,099	253,148
Loyal Order of Ancient Shepherds (Ashton Unity)	121,092	61,538	51,857
Hearts of Oak Benefit Society.	301,327	242,786	26,271
Northumberland and Durham Miners' Permanent Relief Fund	177,602	..	24,507
Rational Association Friendly Society	100,371	59,496	17,153

FINANCIAL STATISTICS.

Income for Year.	Paid for Sickness only.	Paid for Funerals only.	Paid for Medical Aid and Distress Grants.	Paid for Management.	Total Funds.
£	£	£	£	£	£
2,140,149	902,029	170,812	237,676	242,147	14,767,329
1,247,065	632,514	145,580	104,700	126,538	9,650,411
537,450	208,493	28,548	90,958	69,483	2,254,451
225,387	100,109	20,231	18,704	32,169	1,167,293
730,956	397,202	66,192	50,836	42,771	3,990,284
209,186	173,339	2,240	..	16,407	496,416
166,252	84,879	16,971	20,226	16,315	640,810

(One year's later returns are available for some, but not all, the societies, so December 31, 1909, is given for all.)

We give below the totals of the membership, income, expenditure, and funds of 34 out of 170 Orders, and 31 out of, say, an estimated total of 5,000, as it is obvious that in the Government official returns the ordinary societies are still largely credited with property that does not belong to them :—

NATIONAL CONFERENCE OF FRIENDLY SOCIETIES.

34 *Orders and* 31 *Ordinary Societies.*

STATISTICS.

MEMBERSHIP.

Number of Adult Members (United Kingdom) .	3,287,550
Number of Wives and Widows	1,255,343
Number of Juvenile Members.	865,264
Total Membership	5,408,157

FUNDS.

Funds at Credit of Adult Members	£40,351,304
Funds at Credit of Juvenile Members . . .	791,586
Total Funds	£41,142,890
Total Income for 1910	£7,222,586

EXPENDITURE.

Paid for Sickness during 1910	£3,379,134
Paid for Funerals during 1910	709,304
Paid for Medical Aid and Distress Grants during 1910	690,943
Amount paid in Direct Benefits during 1910 .	£4,779,381
Paid for Management during 1910	803,345
Total Payments (1910)	£5,582,726

These statistics of 65 societies work out very near to similar statistics in the famous Appendix N. (1905) for the whole Friendly Societies' System, including 6,773 ordinary societies!

Approximately, we may put the grand totals, allowing for double memberships (mostly in a society giving permanent sick pay and a dividing or sharing-out club), thus:—

Friendly Societies, United Kingdom: Membership, 6,000,000; Funds, £45,000,000.

In 1831 it was estimated that 1,000,000 persons in England, Wales, and Scotland were members of Friendly Societies, out of a population of 16,260,000; in 1911 the proportion (estimated) was 6,000,000, out of a population of 36,075,000—6·2 per cent. to 16·6 per cent. It is also estimated that 80 per cent. of the total population belong to Labour or the industrial classes. A varying percentage, however, of the 6,000,000 belong to the ranks of the middle classes, reaching, in the Manchester Unity of Oddfellows, to perhaps 20 per cent. of total membership.

6. **Relation of the State to Friendly Societies.** *Financial Principles, Reforms, and Management.*—The State commenced (see *ante*) its Friendly Society legislation in the 'Rose Act' of 1873, by conferring certain privileges and protection of funds, as a set-off against reasonable obligations to the State. Subsequent legal enactments have

confirmed and supplemented the same. For instance, the Act of 1846 required a valuation of assets and liabilities of registered societies every five years—a quinquennium—for the purpose of financial test, that members might know how they stood as to rate of solvency. Unfortunately this requirement was set aside four years later, before the first quinquennium had been completed, and was not made a compulsory obligation until twenty-five years later (1875). This weakened financial policy on the part of the State had disastrous effects, causing the untimely end of numerous Societies, and handicapping others in the race for financial stability and actuarial solvency for a generation. Correct scales of yearly contributions for benefits insured, to cover temporary losses from sickness during the working period of life, were quickly found essential, as well as reliable mortality tables. But at the time the Government imposed the certifying by authority of safe tables, none such existed. It was not until Mr. Ansell, in 1835, took the economic doctrine of interest of money and the doctrine of probability, cleared them of old errors, and practically applied them to Friendly Society finance, that firm ground was touched. And though Mr. F. G. P. Neison, the elder, in his *magnum opus* on *Contributions to Vital Statistics* (1845), discovered flaws in application, owing to imperfect data, this should not deprive Mr. Ansell of having once and for all laid the foundations of scientific methods in place of rule of thumb, and showed the way to efficient management and sound rules. Five years later (1850) the Manchester Unity of Oddfellows, in the person of its secretary, Mr. Henry Ratcliffe, entered the field with his famous *Observations on the Rate of Mortality and Sickness*, experienced by his Society. Mr. Ratcliffe followed up his researches by giving further experience and tables in 1862 and 1872. This last inquiry, extending over 1,321,000 years of life, and giving a sickness experience of 1,975,000 weeks, must remain a monument for all time of its author and that Order which had already taken up its undisputed premier position among kindred societies. The mere mechanical labour must have been enormous; but when we take into account the mental toil involved, from fifteen to seventeen hours a day, the lay mind must fail to form an adequate idea of the magnitude of the work accomplished. The cost for paid assistance was under £100, while the famous servant of the Order only received a gratuity of £50 for his extra work in connection with his office. The Government appropriated Mr. Ratcliffe's work, and directed it to be used as the standard for the guidance of the public valuers appointed by the Treasury.

In 1870 a Royal Commission had been granted, known in history as the 'Northcote,' from its chairman, Sir Stafford Northcote (afterwards Earl of Iddesleigh). Sir Michael Hicks-Beach (afterwards Viscount St. Aldwyn) was an important commissioner. The secretary was the well-known pioneer Christian Socialist, Mr. J. M. Ludlow. In 1874 the Commission issued its final Report with those of the assistant Commissioners, who had taken evidence in various parts of the country. The result was the Act of 1875 (38 & 39 Vict., c. 60), with a short supplemental Act in 1876. For until the latter, the ruling of the late Mr. Tidd Pratt held good, and a still further enactment had to be made to even then empower the branches of the Orders to cancel their previous registration, and to re-register themselves as being, what they had always been, branches of their respective Unities. Even then it was estimated that the change, as first directed to be made by the Treasury instructions, would cost the Foresters and the Manchester Unity between them £40,000. Subsequently the requirements were modified and the process made easier. Still, twenty years afterwards, at the advent of the new consolidated Act of 1896, the change had by no means been fully effected. This was the fruits of raising the cry of 'sudden conversion' where no conversion was needed.

The following are among the further principal alterations effected by the Acts of 1875–6:—

One Chief Registrar and three assistants, instead of three separate and distinct Registrars for England, Scotland, and Ireland, with co-ordinate authority.

Deposit of rules by unregistered societies no longer allowed.

Registered office required.

Yearly audits required.

Valuations of assets and liabilities required every five years.

Public auditors and valuers to be appointed by the Treasury, but their employment not compulsory.

Various provisions to secure to members a knowledge of their rights and obligations, and assist them in cases of prosecution for fraud and misappropriation.

The power of the Registrar, on application of a certain proportion of members, to order inspection of affairs or call special meetings.

Minors under sixteen not to be members of any future adult society. No minor under three to be a member of any *future* society.

Power to acquire land to any amount.

Disputes may be referred by consent to the Registrar.

The number of members who can apply to the Registrar for an award of dissolution reduced. Further powers given to the Registrar on this point.

Financial reforms were seriously taken in hand outside the Manchester Unity, and became the ordinary rule among societies, as the results of the general quinquennial valuations demanded by the new Act became realized. In the Manchester Unity itself the good work of Mr. Ratcliffe was carried on by his pupil and successor, Mr. Reuben Watson, in a further series of stocktakings of the financial position of the numerous lodges, though these were based upon a growing insufficiency of data. Meanwhile the Government had issued a weighty Blue-book containing an abstract of the returns of sickness and mortality experienced by Friendly Societies generally for the quinquennial periods — 1855–75. In 1896 the Friendly Societies' Central Office issued a still weightier tome of over 1,300 folio pages, prepared by Mr. W. Sutton, the Actuary to the Registry Office. This volume contains the results of Mr. Sutton's prolonged investigation into the sickness and mortality of the above periods, with new monetary tables of contributions. The Report deals with nearly 4,500,000 years of lives exposed to sickness, and the over 8,000,000 weeks of sickness which was the actual experience of those lives. It is to be feared that these years of incessant labour connected with the actuarial department of the Central Office, and which conferred such inestimable benefits, caused a breakdown in health and the untimely death of its chief. William Sutton was one of those silent workers and unknown martyrs for the good of the commonwealth that the nation at large have never heard of. The importance of these researches are shown when compared with the standard tables till then in use. Besides the 'Ratcliffe' Rates of Sickness and Mortality, there were those of the Foresters and of the Rechabites (Temperance), by Mr. Francis G. P. Neison, with Mr. Ralph P. Hardy's Inquiry into the Experience of the Hearts of Oak, and that of the Abbott Brothers and Abbott Brother and Son's valuations of the Loyal Order of Ancient Shepherds. The general result has been that the new standard tables of the Government were from 13 to 15½ per cent. higher than in the Foresters, and rather a less percentage higher than in the Manchester Unity. None of the great societies could rest satisfied that their existing rates of contribution were adequate to fully carry the respective benefits promised. They have, accordingly, either altered the same in compliance with Mr. Sutton's warnings, or, as the Manchester Unity, looked into their affairs afresh and legislated accordingly. Mr. Alfred W. Watson, grandson of the late Mr. Reuben Watson, has investigated the experience of the Manchester Unity for the quinquennium 1893–7, and provided new life and mortality tables (1903). This investigation cost the Order £17,139, and its results have been used by the Government actuaries in the preparation of financial tables for the National Insurance Act.

Mr. Sutton's report is further valuable for its female experience (extending over close on 400,000 years of lives and 325,612 weeks of sickness experience), showing that female lives are more liable, as a whole, to sickness than male—for example, where a male should pay £1, 3s. 6d. for benefits, a female for the same pays £1, 6s. 6d. per annum, being an average excess of 28 per cent. over the contributions of the Foresters' tables (male). The excess of sickness over that before expected is specially seen in the younger years of life. The report of the sickness experience of the Order of United Sisters, by Miss Worsley (late Organizing Secretary), is later in data, and, so far as it goes, is in full agreement with that of the late Government actuary.

The Foresters have, consequently, directed that all their female courts should be furnished with tables based on the Sutton female experience, and also keep their own experience for future use. This all works against the policy of mixed societies of male and female membership.

The application of the valuation test, conducted in accordance with the mass of improved data now made available, revealed large deficiencies. The Government Blue-books in published results—as of the financial condition of societies with branches (Friendly

Societies, etc., 1886, Parts II. A. to II. F.)—had been unable to give correct statistics: for example, the Manchester Unity—surplus, £4,950 too much, and deficiency, £77,559 too much; *while the total errors give an excess of over five millions and a half in deficiencies.* A special return, asked for by the Right Hon. Joseph Chamberlain, and embodied in the Chief Registrar's Report of 1891, giving results of the third general application of the quinquennial test, may possibly be more accurate, but it is doubtful.

	Total No. of Valuations.	No. of Valuations.		Surplus.	Deficiency.
		Showing Surplus.	Showing Deficiency.		
				£	£
Societies with Branches [No. of Branches]	11,242	2,981	8,961	874,679	6,716,838
Ordinary Societies	3,717	827	2,890	658,252	3,901,435
	14,959	3,808	11,851	1,532,931	10,618,273

As the latest complete statement issued, we give below some particulars of Friendly Societies (not including societies with branches) received during 1910:—

SOCIETIES WITH SURPLUSES.

No. of Members.	Estimated Present Value of Benefits.	Surplus.	Estimated Present Value of Contributions.	Amount of Funds.
	£	£	£	£
England—196,374	1,731,007	330,055	993,501	1,310,965
Wales—1,793	33,902	7,814	18,465	27,079
Scotland—9,970	150,159	15,347	80,239	93,363
Ireland—169	5,841	3,522	2,999	3,428

SOCIETIES WITH DEFICIENCIES.

No. of Members.	Estimated Present Value of Benefits.	Surplus.	Estimated Present Value of Contributions.	Amount of Funds.	Deficiency.
	£	£	£	£	£
England— 520,739	15,039,006	..	8,725,486	5,048,035	1,515,815
Wales— 10,161	228,187	..	148,050	33,129	115,854
Ireland— 544	9,120	..	7,819	354	2,250

The Nature of the Valuation Test.—In valuations we have to determine in what relation the assets of a society stand to the liabilities it has undertaken to meet, as follows:—

LIABILITIES.	£		ASSETS.	£
To estimated present value of future benefits to existing members . . .			By estimated present value of future contributions of existing members . . .	
To other liabilities . . .			By funds invested and in hand	
Balance (being surplus) .		or	Balance (being deficiency) .	

The total number of members under observation in the last Return issued was 746,537. A widely distributed book dealing with *Insurance* versus *Poverty*, by L. G. Chiozza Money, M.P., remarks in italics: '*Of these* 746,537 *members*, 208,306 *belonged to solvent societies, and* 538,281 *to insolvent societies!*' It is a sad business. The 208,306 insured members have an aggregate surplus of £356,738; the 538,281 uninsured members have an aggregate deficiency of £1,691,541. The proportion of really insured members in the societies making returns in 1910 is seen to be less than one in three.' These remarks all come under the heading of 'Small Friendly Societies.' We find that half a dozen alone of these 'Small Friendly Societies' contain 363,518 members, and are credited with a total deficiency of £1,007,708, and that a single 'Small Society' (*sic*) is responsible for a membership of over 300,000 out of the 538,281.

All 'surpluses' and 'deficiencies,' making for 'solvency' or 'insolvency,' are 'actuarial,' and no more. We are not dealing with existing funds or worth of capital only, but with the 'present value' of *future* benefits on the one side, and of *future* contributions of existing members on the other. Both these data are 'estimated.' We have nothing to do with solvency or insolvency as commercially understood. The term 'present value' here 'means, on the one side, the moneys, inclusive of compound interest, which a society *expects* to receive from its existing members—or, on the other side, it means the moneys which a society will have to pay in the future, remote and near, to its existing members, in the shape of promised benefits; the more remote these payments, the greater the amount of compound interest to be earned' (Frome Wilkinson's *Friendly Society Movement*). In other words, a valuation looks towards the future, not back at the past, and deals with estimated and *unrealized* assets which may be, and generally are, far greater in amount than realized (cash) assets. Further, the value in present money of these unrealized assets must greatly depend upon the rate of interest earned over a long series of years; for example :—

	Present value of Liabilities for every £1 a week Sick Pay insured.	Funds invested at
Society of members 30 years of age	£65, 11s. 0d.	2½ per cent.
" " " "	£43, 14s. 10d.	4 "

Mr. F. G. P. Neison, when investigating the sickness and mortality of the Foresters, calculated as follows, on a 3 per cent. earning of interest on capital as it accumulated :—

Sickness Benefits for life—

For every £100 expended	£59 to come from members. £41 increment from interest.

Funeral Benefits—

For every £100 expended	£62 to come from members. £38 increment from interest.

A 'deficiency' is the estimated amount of money the society that is being valued will eventually be short of to enable it within some forty to fifty years to meet in full all promised benefits up to the end of the longest lives of its *at present* youthful members. A 'deficiency,' in commercial life, is an inability to meet claims that have already fallen due, or, rather, are overdue. Consequently, the amount of estimated deficiency in the funds of a Friendly Society at one valuation may be different at the next: if certain measures have been taken, it will be reduced or wiped out; if they are not taken, it will be increasing daily at compound interest. There is no necessity for the deficient amount to be forthwith subscribed for and removed. If the scale of contributions is slightly raised, or full benefits temporarily lowered, the estimated deficiency at next valuation will be altered accordingly, provided the funds, as they accrue, are well invested, and a 3 per cent., or over, rate of interest is realized. The Loyal Order of Ancient Shepherds affords a typical sample of decreases in deficiencies,

	1890.			1895.			1900.			1905.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Degrees of solvency in the £ .	0	15	1	0	16	1	0	17	1	0	18	6
Average deficiency per member .	7	2	0	5	10	6	4	4	8	2	1	4

owing to a thorough application of prescribed remedial methods, extending over fifteen years (see preceding table). The total net estimated deficiency was reduced from £573,000 (1890) to £253,000 (1905). The deficiency of £573,000 occurred in total assets of £1,780,000, but of this total no less than £1,483,000 consisted of unrealized assets in the form of present value of future subscriptions. The following samples will show how deficiencies in other and smaller societies are being attacked :—

County.	I. Valuation. Deficiency.	II. Valuation, 5 years later. Surplus.
Warwickshire	£4,396	£2,045
Middlesex	5,023	413
Surrey	18,131	378

The only hopeless cases of 'deficiency' are those which are left alone and the Society is allowed to deliberately drift on to the rocks—such as a smaller Order which increased its large actuarial deficiency 10 per cent. between two quinquenniums, bringing it to £180,000, or an average deficiency per member of £15, 12s. 4d., in a society of less than 12,000 members. Yet we find the author of *Insurance* versus *Poverty* giving the financial position of some of the small (?) Friendly Societies as if the deficiencies were deficiencies in *funds*, and amounted (in England) to a million and a half *sterling*, while omitting to state that the amount of unrealized assets in present value of contributions, *as yet unpaid*, was *eight millions and three-quarters to five millions of realized or cash assets*, and that an increase in interest to be earned, or a small modification of existing tables, would gradually so raise that present value as to greatly lessen in another valuation the estimated deficiencies, and eventually, if continued, to altogether wipe them out in nine cases out of ten. The same is true of the over ten millions and a half of estimated deficiencies in the Chamberlain return, the bulk of which consist of insufficient value in present money of *unrealized* assets.

Nothing is more elastic and susceptible of treatment than a Friendly Society's sickness contract, nor more easy of remedy if taken in time. Unfortunately, the late Earl of Selborne, then Sir Roundell Palmer, gave an opinion that an alteration of rule as to the reduction of benefits was not binding upon persons in actual receipt of the same, or entitled to actual receipt, at the time it was made (1864), though it was a fundamental principle that members when they joined were bound by subsequently amended rules. This was held good law by Mr. J. M. Ludlow, the Chief Registrar, till 1890, thereby reducing society after society—whose old members were drawing large weekly payments of reduced sick pay, that were practically pensions for life—to dissolution for want of funds. So long did it take to show the Government officials concerned with registration of amendments of rules that Friendly Societies were mutual associations, with members paying voluntary contributions not recoverable at law; that they were not of a like nature to associations whereby one portion gained a profit at the expense of the other; and that, therefore, the law of contract in commercial concerns did not apply to those where the members were bound together for communal good.

The process of eventually getting rid of a deficiency is best shown in the case of the Manchester Unity (see table on page 257).

The gross surpluses, however, at the eighth valuation summary are £1,256,791, and the deficiencies £849,166. The surpluses belong respectively to the lodges that are credited with them; they cannot be considered as a set-off against the lodges that are credited with deficiencies. There are 2,128 lodges with surpluses, and 1,658 with deficiencies; and the

Abstract of the Eight Valuation Summaries, dating from 1870 to 1907.

No. of Valuation. (1)	Date of Valuation. (2)	Present Value of Benefits Assured. (3)	Present Value of Assets applicable thereto. (4)	Total Deficiencies. (5)	Total Surpluses. (6)	Net Deficiency. (7)	Net Surplus. (8)
		£	£	£	£	£	£
1	1870	10,767,839	9,424,393	1,360,677	17,230	1,343,447	..
2	1875	11,936,279	11,564,111	585,298	213,130	372,168	..
3	1880	13,313,682	12,685,862	1,248,779	620,959	627,820	..
4	1884–5–6	15,676,751	14,911,930	1,368,891	604,070	764,821	..
5	1889–90–1	17,575,003	16,943,738	1,333,343	702,078	631,265	..
6	1894–5–6	19,947,990	19,485,586	1,307,621	845,217	462,404	..
7	1899–1902	22,738,174	22,771,520	1,033,456	1,066,802	..	33,346
8	1904–7	24,117,236	24,524,861	849,166	1,256,791	..	407,625

million and a quarter of surpluses will not reduce the over three-quarters of a million of deficiencies, unless a percentage of surpluses — say, one-third — is uniformly so used in the spirit of brotherhood on behalf of lodges in an unsatisfactory position, sometimes owing to an inequality of conditions. The Foresters (with their new Leicester Tables) and other leading Orders, and several of the Centralized and of the Local groups, have been busy during the last ten to twenty years (some for longer) putting their houses in better order.

The Act of 1896 consolidated all previous Acts, and dealt only with Friendly Societies proper and any specially authorized societies; while all collecting societies (burial) and industrial assurance companies were placed under a new and separate Act of their own. Friendly Societies were also allowed to receive members from birth, instead of waiting till the age of three; this placed them on an equal footing with the collecting societies and the industrial assurance companies (1908). Another short Act made it uniformly compulsory that boards of guardians should not take into consideration in granting out-relief any small sums (up to 5s. a week) which an applicant might be in receipt of from his Friendly Society. Unfortunately the Act does not cover Scotland.

Among new departures there has been an extension of objects in the direction of the receipt of moneys on deposit on the savings bank system, and the insurance of larger sums than funeral allowances at death. This expansion has been inaugurated by the Foresters, and taken up in other large societies. The Old Age Pensions Act of 1908 has done something to relieve the drain upon societies of aged members who had practically become old-age pensioners without having made provision for their pensions. The actual sickness experience of old districts of an Order, as compared with Neison's Foresters' experience, worked out thus :—

Expected weeks .	4,968	Experienced . . .	10,196
" " .	52,775	" . . .	81,780
" " .	7,775	" . . .	19,517

But the Friendly Societies feel that hardship will ensue unless their request that, in estimating the income of members who are applicants, the local pension authority should discontinue to take into consideration any weekly sick pay or superannuation the same may be in receipt of. To do so is to penalize thrift.

In all matters in Parliament calculated to affect the Friendly Societies movement, the National Conference of Friendly Societies, established in 1887, looks after the welfare and interests of the societies, as well as bringing them together for mutual counsel and support. The executive of the Conference acts as a standing Parliamentary committee, and has two Parliamentary agents, as also the Manchester Unity, the Foresters, and the Hearts of Oak. Among those who (besides persons already mentioned) have been in the forefront, and to whom the Friendly Societies owe a lasting debt of gratitude, are the following: the late Mr. Charles Hardwick; the late T. Bullon Stead; the late Mr. Thomas Walton, J.P.; the late Mr. Samuel Shawcross; the late Mr. Thomas Collins; the late Mr. W. G. Bunn; the late Mr. Duncan Kennedy; Mr. R. W. Moffrey, J.P.; and others too numerous to mention individually. Mr. A. W. Watson, one of the actuaries of the Manchester Unity, has been appointed actuary to the Central Committee of the Health Insurance Commission; Mr. J. Lister Stead, late Permanent Secretary to the Foresters, a Commissioner for England; and Mr. John M'Nicol, Secretary to the National Conference, a Commissioner for Scotland.

To sum up: There has been a slowing down in numerical strength, and in the case of the larger societies, not only a relative decrease of membership in the face of the ever-increasing population, but an actual stoppage of growth. Financial strength has, however, maintained in recent years a steadily improved position, which was not possible of attainment in days when there were no rightly adjusted scientific tests that could be applied to contracts which were made in non-scientific days.

The leading causes of deficiencies and the too often unsatisfactory condition of Friendly Society finance are the following:—

1. Inadequacy of existing annual contributions or subscriptions of members to carry the benefits insured.

2. Insufficiency of earning powers of capital.

3. Lack of efficient management, especially in safeguarding of sick funds, and thorough adoption of financial reforms.

4. Payment of old age pensions under the guise of sickness benefits.

All such terms as 'insolvency,' 'rottenness,' 'sad business,' 'deplorable management,' and the like are altogether out of place. Of Friendly Societies in general it may be said that, 'as there are no associations the benefits of which are more important to their members, so there are none that are managed with greater rectitude, and few with equal success' (Sir Edward Brabrook, C.B., late Chief Registrar, in *Provident Societies and Industrial Welfare*). It is true that it is the survival of the fittest, but the fittest are unmistakably working their way to the front, and at every succeeding valuation increasing their degrees of actuarial solvency—climbing slowly but surely the ladder of ascent, from a worth in the £ of less than 15s., by quinquennial rungs, towards a worth of 18s., 19s., and 20s. It is only those societies which knowingly refuse to go up higher that sooner or later will be overtaken with disaster. But even here hope in the shape of new legislation has come in the eleventh hour to the rescue. It is seventeen years since I wrote: 'I can only say that the time has come in the history of the Friendly Society movement when it is the bounden duty of the State, *for the paramount welfare of the community*, to wisely and judiciously assist by legislation the Friendly Societies of our country, as national monuments of working class mutual thrift, to set their house in order, and to encourage the financial leaders . . . to persevere, by removing from the path of progress certain stumbling-blocks and impediments which, at the worst, bar the way, or, at the best, retard the pace. Provided such . . . enabling aid is given, the financial outlook is full of hope, for the realization of impending dangers is being increasingly felt, and the reforming spirit from within grows day by day' (Paper read before the Royal Statistical Society, 1895). From an unexpected quarter that legislation has at last come in the form of the National Insurance Act, Part I. See INSURANCE, HEALTH.

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Garden Cities. See MODEL FACTORIES AND VILLAGES; EMIGRATION; HOUSING.

Gas Companies. See CO-PARTNERSHIP, LABOUR.

General Federation of Trade Unions. See TRADE UNIONS.

General Strike, The. See NEW LABOUR MOVEMENTS.

Gilds. See FRIENDLY SOCIETIES.

Half-time System. See EDUCATION, INDUSTRIAL; WOMEN AND CHILDREN AND THE LABOUR MARKET.

Health of Workers. See FACTORY LAW; PHYSICAL CONDITIONS, ETC.

Home Industries. See WOMEN AND CHILDREN AND THE LABOUR MARKET.

HOURS OF LABOUR.

In the history of conflicts between capital and labour, whether carried on in Parliament by legislation or in workshops by strikes, the demand for shorter hours of labour occupies a foremost position. Hours of labour were dealt with in mediæval legislation such as the Statute of Labourers (1562), but the purpose was then to impose work, and not to protect the workman. With the establishment of factory conditions, the community was faced with the problem of a defenceless working-class and of overwork, and by the end of the eighteenth century proposals were made for some limitation of working hours. The Act of 1802 limited the hours of apprentices to twelve, and this was extended in 1819 to all children under sixteen. In 1833 the protected age was raised to eighteen, and two years later night work was prohibited for the same class. In 1844 the work of women in factories was limited to twelve hours, exclusive of meal times.

By 1830 an agitation had commenced for the general limitation of working hours to ten per day. This was headed by Oastler, and in 1831 Sadler introduced the famous Ten Hours Bill, which on his defeat was taken up by Lord Ashley, who afterwards became Lord Shaftesbury. Round this Bill the famous Ten Hours agitation centred. In a good many of the handicrafts where labour was combined, particularly in London, a ten hours day became the practice of the trade by 1840; but legislation was not secured until 1847, when the law was made to apply only to women and young persons, and a Saturday half-holiday was granted. Owing to the conditions of work in the Lancashire mills, however, the hours of women and young persons determined the hours of men, and the Act of 1847 affected all labour. A series of Acts was then passed applying these protective provisions to other trades.

The year before the Ten Hours Bill was carried, the Nine Hours agitation was begun by the Liverpool stonemasons. Having died down, it was renewed by the London masons in 1853, and four years later it was taken up by the London carpenters. In 1858 a joint memorial was sent to the employers by the workpeople engaged in the building trades; and the famous building strike in London followed on the rejection of the memorial. The battle ended in 1860, neither side gaining the victory. The engineers then took up the cry of Nine Hours, and secured it in 1871 and 1872 by a series of strikes, beginning with that on the north-east coast. Most of the trade disputes between 1870 and 1873 were in support of demands for the Nine Hours day.

As early as 1817 Robert Owen advocated a working day of eight hours. There has always been a fascination about an eight hours working day to labouring people. It was asked for during the revolutionary agitations of 1848; it was an important plank in the programme of the International Working-men's Association (1864); and in 1869 an Eight Hours resolution was passed by the Trade Union Congress. Thorold Rogers states that eight hours was the common length of the working day during the fifteenth century. It was not until 1885, however, that a popular agitation was started. In 1887 an eight hours amendment was moved to the Coal Mines Regulation Bill, and next year a Miners' Eight Hours Bill was introduced in the House of Commons. The agitation in the country was then at its height, and in that year the Huddersfield Corporation granted an eight hours day to its tram servants. Certain private firms, especially engineering firms, voluntarily started an eight hours day at this time, but some abandoned it later. For the next four or five years, chiefly in connection with the Socialist movement, demonstrations were held all over the country, and no demand was more popular with labour organizations than this. It died down in face of the pressure of other political and industrial questions, and it has never revived, although, at the moment of writing, many Trade Unions are beginning to renew their interest in it. In 1908 the Miners' Eight Hours Bill was passed, and thus, for the first time, the legislature directly interfered with the hours of adult labour.

In new countries the Eight Hours agitation has been exceedingly popular. It began in the United States immediately after the war, and in New Zealand and Australia it reached a head as early as 1850. It was secured by the workmen in Victoria in 1856, and other parts of the Australian continent followed shortly afterwards.

The law as it stands (Factory Act, 1901), and leaving out certain technical details which can be gathered only from a minute study of the Act itself and the Home Office Orders issued under it, is as follows:—In textile factories the hours of women and young persons must not be more than between 6 a.m. and 6 p.m., or 7 a.m. and 7 p.m., with 2 hours for meals, and Saturday must be a half-day; in non-textile factories an additional choice is given of a day from 8 a.m. to 8 p.m., and only 1½ hours are prescribed for meals. In domestic factories and workshops the hours for young persons may be from 6 a.m. to 9 p.m., but 4½ hours must be given for meals, and there is no prohibition for women, except that they must not be worked on Sunday. Then a series of variations is allowed for particular trades, but the average day's work is regulated by the above-quoted provisions. Night work is permitted only for exceptional trades, and is totally prohibited for women in factories. Children in factories may work only during the morning or afternoon shifts, or upon alternate days. Legislation regarding shop hours, begun in 1892, has not specifically limited the hours of assistants, except young persons, who may not be employed for more than seventy-four hours per week, including meal times, until the Act of 1911, which provided that on at least one day in each week an assistant shall not be employed about the business of a shop after 1.30 p.m.

Continental legislation on hours of labour is exceedingly complicated and varied. Every country has been following in the footsteps of Great Britain, and has been legislating not only for night work and dangerous or otherwise special trades, but most have dealt with normal factory work, and now a few, like France, with men as well as women and children. In the *Abstract of Foreign Labour Statistics*, published annually by the Labour Department of the Board of Trade, a summary of the Continental laws is given, together with a table showing the number of hours worked per day in the chief industrial countries. Factory legislation in the United States is dealt with by the separate states, but the Federal Government and several states have passed an Eight Hours law which applies to workmen on government work.

The history of Labour agitation shows that strikes in favour of the reduction of hours have neither been so numerous nor so successful as those in favour of increases of wages, the reason apparently being that employers find it impossible to forecast the effect of a shorter working day, and are, therefore, more inclined to resist the demand for it. According to the latest official statistics for the five years ending 1910, the total number of workpeople directly involved in disputes was 1,037,912, and of these only 196,837 struck for reduced hours, though the years 1909 and 1910 were unusually productive of this type of dispute. In 1910, whilst there were 15,000 more men involved in disputes about hours than about wages, only 532 were successful in the former, as against 6,033 in the latter. Although this is true, however, it must be remembered that after these strikes employers have usually reduced their hours; but the gains have been counteracted by a practice of overtime, and in periods of slack trade attempts have frequently been made to lengthen the working day. It is also for these reasons that many people favour legislation rather than strikes. When hours are shortened, economies are generally effected; for one reason, because the health of the workers is improved. They do not work during hours when they are tired; the best of them enjoy the leisure necessary for their mental and physical recuperation; there are fewer breaks for meal hours during the day, so that machinery runs more steadily; and generally the fixed capital is used more economically and general expenses reduced. This limits the effect of an eight hours day as a cure for unemployment. Where the work is mainly time work, as in the running of buses, a shortened day must result in an increased staff; but where it consists in the production of quantities, as in factories, the quantity required may be produced within the shorter day without any appreciable increase in the number of people employed. For that reason, too, the shortened day need not lower wages, and need not increase the cost of production. In some trades the shortened hours lead to a rearrangement of shifts, which means that more men are employed, the volume of production is increased, and the cost per unit of production is lowered. Marshall (*Principles of Economics*, I., p. 780), discussing this, concludes: 'Thus the arts of production would progress more rapidly, the national dividend would increase, working-men would be able to earn higher wages without tempting capital to migrate to countries where wages were lower, and all classes of society would reap benefits from the change.' But it is wrong to generalize regarding the effect of shortening the working day, because each industry has to be judged in relation to its circumstances. As a matter of historical fact, however, the production in the shortened day has very speedily, if not immediately after the change, come up to old standards, and has surpassed them, especially where the efficiency of labour depends on its tools. This has been repeated in Lancashire after each shortening of the working day.

With every improvement in machinery the shorter working day becomes more and more practicable. With the speeding up of machinery it becomes more and more necessary, and, conversely, every reduction in the length of the working day is an impetus to the improvement and the speeding up of the mechanical aids to labour. See FACTORY MANAGEMENT and FACTORY LAW.

J. R. M.

HOUSING.

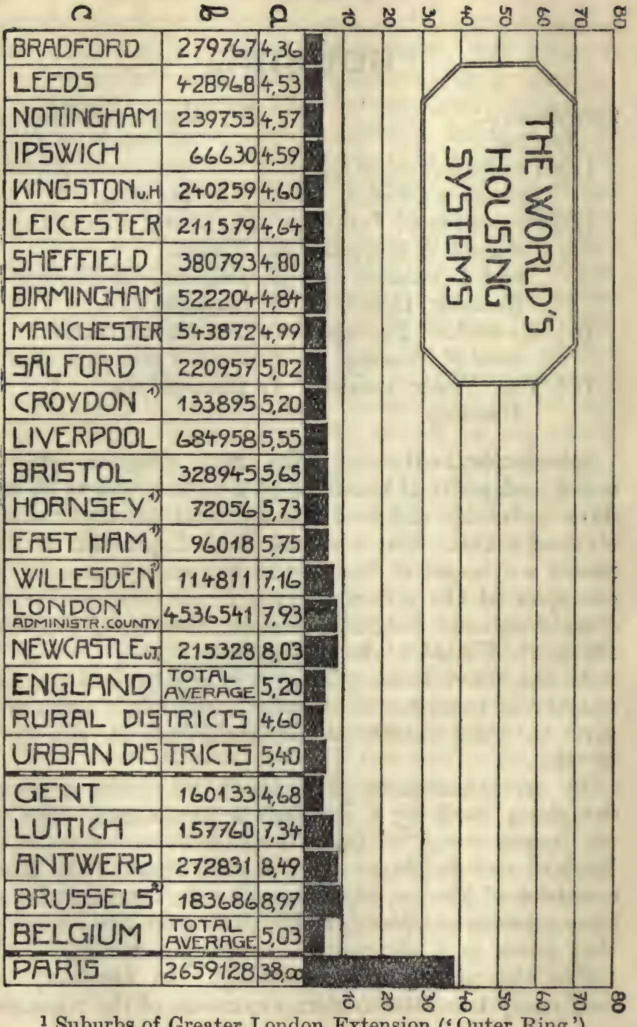
Introductory.
1. *England.*
    - (1.) *The First Stage of the Housing Problem.*
    - (2.) *Second Stage: Introduction of Hygiene and Legislation in Housing*, 1848–90.
    - (3.) *Up-to-date Development of Housing.*
    - (4.) *The Under-normal Dwelling.*
    - (5.) *Municipal Housing. Housing by Companies and Philanthropists.*
    - (6.) *Rural Housing.*
2. *France.*
3. *Belgium. Netherlands.*
4. *Germany.*
5. *The United States.*
6. *Land Value and Rent.*
7. *Bibliography.*

Introductory.—Housing, the true criterion of the social and political standard of a nation, shows in our days a totally different development in the various civilized states. Our annexed Table I. presents to the reader a synopsis of the world's housing systems. The examples of the different types of building are taken from England, Belgium, France, Germany, Austria, Denmark, United States of America.

In the above table, column *a* is seen to indicate the number of inhabitants of each house, while column *b* gives the total number of the inhabitants of each town or state.

By an examination of Table I. we notice a group detaching itself by a decided predominance, even in the largest towns, of the individual house—namely, in England and Belgium. To them are opposed the other countries of Europe, where actually the tenement house system seems to prevail, although it should be observed that there is a distinctly marked graduation. Paris shows the many-storied dwelling. In Germany we may easily trace the modern expansion of the tenement

TABLE I.



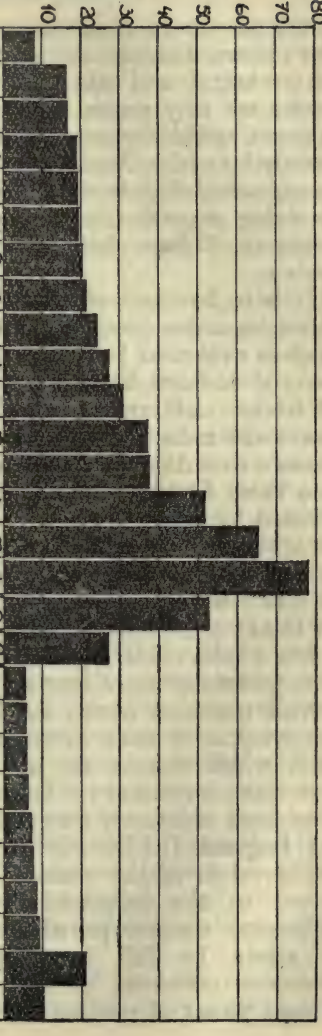
c	b	a
BRADFORD	279767	4,36
LEEDS	428968	4,53
NOTTINGHAM	239753	4,57
IPSWICH	66630	4,59
KINGSTON u.H	240259	4,60
LEICESTER	211579	4,64
SHEFFIELD	380793	4,80
BIRMINGHAM	522204	4,84
MANCHESTER	543872	4,99
SALFORD	220957	5,02
CROYDON [1]	133895	5,20
LIVERPOOL	684958	5,55
BRISTOL	328945	5,65
HORNSEY [1]	72056	5,73
EAST HAM [1]	96018	5,75
WILLESDEN [1]	114811	7,16
LONDON ADMINISTR. COUNTY	4536541	7,93
NEWCASTLE o.T.	215328	8,03
ENGLAND	TOTAL AVERAGE	5,20
RURAL DISTRICTS		4,60
URBAN DISTRICTS		5,40
GENT	160133	4,68
LUTTICH	157760	7,34
ANTWERP	272831	8,49
BRUSSELS [2]	183686	8,97
BELGIUM	TOTAL AVERAGE	5,03
PARIS	2659128	38,00

[1] Suburbs of Greater London Extension ('Outer Ring').

[2] Not including Suburbs and Brussels Agglomeration.

TABLE I. (*continued*).

a	b	c
BREMEN	214861	7,96
STRASSBURG	167678	16,10
CÖLN	428722	16,41
BARMEN	156080	18,46
FRANKFURT a/M	334978	18,75
ESSEN	231360	18,92
DÜSSELDORF	253274	20,09
HANNOVER	250024	20,98
MANNHEIM	163693	23,75
LEIPZIG	503672	27,64
CHEMNITZ	244927	30,29
MÜNCHEN	538983	36,53
HAMBURG	802793	36,81
BRESLAU	470904	51,97
CHARLOTTENBG	239559	64,78
BERLIN	2040148	77,54
VIENNA	2059266	52,00
COPENHAGEN	403472	26,60
PHILADELPHIA	1293697	5,4
BALTIMORE	508957	5,7
CLEVELAND	381768	6,0
MILWAUKEE	285315	6,2
BUFFALO	352387	7,1
CINNCINNATI	325902	8,0
BOSTON	560892	8,4
CHICAGO	1698575	8,8
NEW= MANHATTAN	2050600	20,4
YORK BROOKLYN	1166582	10,2



house advancing from east to west, and, especially in the eastern districts, claiming our attention on account of its height and size. In the towns of the United States we may notice a clear distinction, reducible, it appears, to the elements of population. Towns peopled mainly by native Americans or by English and German immigration cling to the individual home, whilst towns receiving a conflux of immigrants from Eastern and Southern Europe drift towards the tenement house system.

It is to be observed that in the case of most of the countries under consideration the conditions controlling modern evolution have been identical—namely, expansion of industrialism, increase of population, growth of towns, and intense concentration of population in towns and industrial centres. Nevertheless, it is during modern evolution that the great contrasts noted above (see Table I.) have originated. Such contrasts are not effected by natural causes; they are mainly the result of arbitrary and wilful measures. The house is not, as perhaps might be presumed, the free creation of the architect or the builder, who would construct the type he thinks most fitting. The builder has by no means a free choice; his selection is not determined by his own preference for either a single cottage or a many-storied tenement house, but is strictly bound up with the systems of town extension and the local value of land, which enforce the one and prohibit the other. National institutions for housing, therefore, have to be considered separately for each country.

1. England. (1.) *The First Stage of the Housing Problem.*—The origin of the modern housing problem may be traced to the industrial revolution, for which the eighteenth century paved the way, and which began to attain its full development in the nineteenth. The new industrial methods, with their greatly increased power of production, attracted fresh masses of workmen. Working people streamed into the towns and factories, first by tens of thousands, and soon after by hundreds of thousands. Small towns developed into industrial centres during the first three decades of the nineteenth century (1801–31). The movement was extraordinarily rapid and widespread. While in the year 1801, 1,467,870 inhabited houses were counted, the number up to 1831 had increased to 2,866,595 ; thus a million new houses had been created, making an increase of 50 per cent.

It is important to remember, however, that the difficulties of the situation consisted not only in the magnitude of the task, but also in the entire novelty of the exigencies of the development, for which it was impossible to be prepared. The manufacturing towns and villages had not been laid out with a view to providing for such masses of inhabitants ; decades had to pass before the necessary experience and knowledge could be brought to bear upon the primitive necessities of such a conflux of people. The immediate result was that buildings were erected regardless of method, system, and purpose. Small dwellings were put up wherever a free space was to be found ; ground was put to profitable use without forethought and arrangement. The congestion increased in proportion to the growth of the population. At the same time—*and this is characteristic of the period*—there was an entire absence of those preparations which we to-day consider necessary for and indispensable to a great accumulation of people ; such preparations were practically unknown. The period from 1800 to 1840 may, therefore, be looked upon as the first stage of the new conditions affecting the housing question ; it was simply a transition period, with all the faults and failings that belong to such a period.

A grave warning was received in 1830–2. One of the worst outbreaks of cholera ever known swept over the densely populated and badly kept urban districts of the Continent, and caused great loss of life. In England, also, defective sanitation resulted in serious epidemics. The dangers to the town community of badly constructed, badly utilized, and badly planned buildings were now apparent.

This knowledge—which, however, only concerns the hygienic side of town planning—prepared the way for the second stage in the development of modern methods of housing. The general public, as well as Parliament, became aware of the serious evils which the rapid growth of towns had caused in housing. In 1844, at the instigation of Sir Robert Peel, a commission was appointed to investigate the condition of dwellings in large towns. From the sanitary point of view a grave state of affairs was revealed. The supply of good drinking water, the disposal of sewage, the making of roads in particular, were still quite defective. Typhus and other infectious diseases found the most fertile soil in the towns in which arrangements were still lacking for the cleansing of rapidly growing and densely populated areas. To provide a water supply, to lay drains, and to construct roads seemed to be the most urgent task, the carrying out of which begins a new section of town building.

(2.) *Second Stage : Introduction of Hygiene and Legislation in Housing*, 1848–90.—In 1848 the Public Health Act was passed—a fundamental measure dealing with the sanitation of towns. A few years later—in 1851—Lord Shaftesbury's Act laid the foundation in England of legislation which concerns itself with the actual building of houses. Thus two lines were established along which English housing methods moved during the next four decades—namely (1) Hygiene, which dealt with the public health ; (2) Regulations for the building of houses, which had for its object the creation of satisfactory housing conditions. The following table shows in statistical form the situation which had to be faced in 1850–90.

TABLE II.

GROWTH AND DISTRIBUTION OF THE POPULATION, 1801–91.

	1801.	1851.	1891.
Population in towns exceeding 5,000 inhabitants	2,314,515	8,028,011	19,763,264
Population in towns having less than 5,000 inhabitants, and in the country	6,578,021	9,899,598	9,239,261
Total . . .	8,892,536	17,927,609	29,002,525

From 1801 to 1851, indeed, the population of towns exceeding five thousand inhabitants had increased nearly fourfold, while that of the country had risen by half. But the greatest changes are observed in the period 1851–91, during which time 12,000,000 people appeared for whom housing accommodation had to be provided.

TABLE III.

GROWTH AND DISTRIBUTION OF THE POPULATION REDUCED TO PERCENTAGES.

Year.	London.	Other great Towns.	Towns 20,000 to 100,000 Inhab.	All Cities exceeding 20,000 Inhab.	Urban Districts.	Rural Districts.
1801	9·73	0·00	7·20	16·94	—	—
1831	10·64	5·71	8·70	25·05	—	—
1851	13·18	9·40	12·42	35·00	50·08	49·92
1871	14·33	11·50	16·20	42·00	61·80	38·20
1891	14·52	17·30	21·76	53·58	72·05	27·95

No large towns existed in 1801, with the exception of London. In 1801 towns with more than twenty thousand inhabitants contained 17 per cent. of the population; but up to 1851 this percentage rose to 35, which established an *equilibrium* (49·92 to 50·08 per cent.) between the town and country population. Our following period, 1851–91, is marked by a growth in the town and a decided *decrease* in the country population, until the respective percentages reached were 72 to 28.

House-building had an extraordinary task to accomplish in this period, and undoubtedly great advances were made at this time in housing methods. The working classes formed the broad basis of the social pyramid; their political as well as their economic position had risen considerably. The peculiar character of the working-class dwelling was now recognized. While in other countries the workman's house was still looked upon as either an appendage of the large house or as a separate kind of dwelling, requiring, in certain cases, special treatment, in England the dwelling of the artisan was recognized to be the normal and fundamental form of town building. The typical workman's cottage sets its image, by reason of its preponderance, upon the new English town.

Meanwhile legislation had displayed great activity in the two directions already pointed out—namely, hygiene and house-building. Among laws for sanitation should be mentioned the Public Health Act of 1875, under which Act the Local Government Board issued in 1877 a model code of by-laws referring to new streets and buildings, removal of nuisances, etc.; the Public Health Amendment Act of 1890, etc. The Artisans' and Labourers' Dwellings Act of 1869, called Torrens Act, after its promoter, and the Cross Act of 1875 (both with additions in 1879 and 1882), had a direct effect on housing methods. The first dealt with the improvement and demolition of insanitary houses; the second with the clearance of unhealthy districts. In 1884 a Royal Commission on the Housing of the Working-classes was appointed, of which the Prince of Wales (afterwards King Edward VII.) was a member. Upon the Local Government Act of 1888, which established administrative reform (Institution of the London County Council), there followed the Housing of the Working Classes Act of 1890, which compiled and extended the legislation in this direction. This Act brings to an end a period rich in effort and achievement.

Part I. of the Act deals with great clearance and rehousing schemes to be carried out by the local authority; Part II. provides for the improving and suppression of the insanitary conditions of single houses or small slums; Part III. empowers the local authority to buy land and contract loans for the erection of new dwellings.

(3.) *Up-to-date Development of Housing.*—In the preceding periods we have seen how new methods in the art of town building were developed. But great as was the progress made, the structure of the town had remained fundamentally unchanged. Since the 'nineties of the last century, however, certain ideas appear which entirely break away from the traditional conception of the town, and introduce new methods of town construction. These tendencies are represented by the Town-Planning and Garden City movements.

We shall best understand the object of these efforts if we consider them historically. The first modern period of town building has shown us how unmethodical and uncontrolled ways of building lead only to a bad and dangerous condition of affairs. Such a state of things is, in the long run, detrimental even to the interests of the landowner. The second period, 1848–90, realized that strict regulations and public control are advantageous. It appeared necessary to guide the building trade into better methods, to create new sanitary arrangements for urban agglomeration, and to direct attention to the claims of hygiene in housebuilding. It was thought that certain requirements of public health must be forced upon the builder, and that *thereby* mainly a satisfactory development of town building might be arrived at. But the cutting up of the sites in town extension was left to the individual landowner, and, generally speaking, no power existed to direct private enterprise in the formation of the town.

The town, however, is not merely a plurality of houses; it has a being of its own, which we may love or hate, and which may be ugly or beautiful. We may shape it as the artist shapes the marble, and we may either spoil it or turn it into a work of art.

In 1887 Sir William Lever removed his factory some miles out of Liverpool, and founded the model settlement called Port Sunlight. In 1889 Messrs. Cadbury began to build their model town at Bournville, near Birmingham. Both of these schemes set at naught the generally accepted idea of a town, and have placed the artisan's home in a surrounding of garden and village. In 1898 Ebenezer Howard published his book on *Garden Cities*. The most important points emphasized in it are: (1) The town should be laid out according to a fixed plan, and should form, therefore, an independent settlement, and should be restricted in its growth; (2) the land should remain in the possession of the co-operative society. Soon after this the first Garden City was laid out at Letchworth, thirty-four miles from King's Cross. A new direction was given by such practical and literary work, for the furthering of which credit must be given to Mr. T. C. Horsfall. Moved by the town-planning powers of Continental states, Mr. Horsfall presented in his writings—which first appeared in 1904—a claim for the establishment of public control over the building of towns in England. An effective propaganda was unfolded by the National Housing and Town-planning Council, which was much stimulated by the appearance of Mr. William Thompson's *Handbook on Housing.*

That the new schemes for town planning could be carried out in direct connection with the largest towns was proved in 1904 by the founding of Hampstead Garden Suburb, only twenty minutes distant from the centre of London. The peculiarity of this form of town extension is that it is laid out in all its parts according to a preconceived uniform scheme, and all its buildings are brought into harmony with the whole. The idea of mixing the various classes of society was put into practice by the erection of the cottage side by side with the high-rented home. In Hampstead there are two Tenants' Associations at work forming a co-operative system in housing, which has been greatly developed of late by Henry Vivian, and which will play an important part in the future. Similar plans were carried out by large employers in different parts of England (Earswick, Woodlands).

In this way models were created for three types of schemes—the Garden Village, the Garden City, and the Garden Suburb. In 1909 the Housing and Town-planning Act appeared, which forms an important basis upon which new efforts in town construction may work.

By town planning is meant the drawing up of a general plan for a town or part of a town, fixing in advance the distribution of streets, roads, and communications, of open spaces, parks, etc. The plan is drawn up, or at least confirmed, by public authority. Let us remember that our first stage of housing development, 1800–40, provided, without any foresight and in a defective manner, the urgently needed housing accommodation. In the second stage, 1848–90, we saw public authority interfere with a view of securing proper sanitary conditions for each house. The third and actual stage creates the power of directing the construction of the town as a whole. It is to be hoped that this power will be employed to improve the state of housing, without, however, impairing the traditional advantage of individual enterprise and initiative.

(4.) *The Under-normal Dwelling.*—The movements that we have been considering had as their object the creation of the ordinary normal workman's dwelling. By this we mean the dwelling that can be rented by a normally paid member of the working-class. But we must make a clear distinction between such an average dwelling and the under-normal dwelling.

The causes of the existence of the under-normal dwelling are various. The first is found in the age of the building. We should take into consideration that every town, however rapidly it may have grown, possesses a large number of old houses. We must even say that at any given time the greater part of the existing buildings, about three-fourths, are those of older periods. The older house, if not kept in good repair, deteriorates in value and decays. Within our towns there is, moreover, a continuous shifting of values: a good residential district, especially in the centre of the town, grows out of date, becomes less valuable, and is forsaken by its former good tenants. In addition, there is the personal element. Some part of the urban population is incapable of paying the normal rent, and is obliged, if nothing else is to be had, to take an under-normal dwelling. Towns receive, moreover, a considerable number of immigrants, who come from countries or territories where the pretensions to culture are less, and who are content with inferior homes. Finally, towns contain, to a certain extent, a number of people who sink below the level of their class, and who seek out dilapidated dwellings.

In dealing with housing conditions, the under-normal dwelling should always be considered apart. Many deceptions in the development of modern housing arise from the fact that this distinction has not been made. The purposes which the under-normal dwelling serves and the means which meet its case are entirely different from those of the normal dwelling. When we proceed historically, indeed, and bring to mind the conditions obtaining in the first period of the development of towns, we may own that the badly-built areas of those days had to be entirely done away with. It took decades to overcome the evils of the past. The requirements of traffic, moreover, made it necessary to pull down the central parts of towns, and to turn them into commercial districts. At the same time, we should not forget that thereby little was gained for housing purposes, and that, most likely, much was lost.

With regard to the town of our day, however, we may say: *The slum is not built; it develops.* Preventive measures, therefore, are essential. We must first realize that a certain stock of the cheapest kind of dwelling is necessary, and should be maintained and provided for. Generally speaking, the above-mentioned causes which foster the under-normal dwelling should be attended to. Education and instruction, of course, stand foremost among the means of reform.* However, if legislation goes so far as to order the demolition of the slum and—not without good reason—to interfere with private ownership, it might be worth considering whether preventive powers ought not to be given to local authorities to enforce good management, and to protect houses from being degraded into slums.

(5.) *Municipal Housing; Housing by Companies and Philanthropists.*—A great number of towns in the United Kingdom have shown much activity in municipal house-building. Important undertakings for the cleansing of the interior of the town and for rehousing were carried out in Glasgow (City Improvement Trust; expenditure, £1,200,000); London (Boundary Street Improvement, and others); Birmingham, under the management of Mr. Joseph Chamberlain (expenditure, £1,300,000); Manchester; Newcastle-upon-Tyne; and Sheffield. Considerable work was achieved in Liverpool, where, in 1908, 2,170 dwellings were erected. The municipal report rightly points out that a far better service had been done to the town itself than if the money thus spent in house-building had been frittered away in doles to the poor. Up to 1908, 7,880 dwellings were finished by the London County Council; the recent constructions in White Hart Lane Estate rank among the best of the modern buildings of the cheap cottage class. The number of small and medium-sized towns where dwelling-houses have been erected by local authorities is very considerable.

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* We need scarcely allude to the excellent work initiated by Miss Octavia Hill.

The building activity shown by companies of shareholders is extensive. These companies exclude speculation, and seek to yield an interest of 3 to 5 per cent. on their capital. The most important is the Artisans', Labourers', and General Dwellings Company in London, whose capital amounts to £2,500,000. Building societies have developed widely. Among the philanthropic foundations, we might mention the Peabody Trust, the Guinness Trust, and the gift of a sum of £2,000,000 left recently (1912) by Mr. W. B. Sutton.

Lodging-houses have been erected in a number of towns, to a great extent in Glasgow and London. As an example, may be mentioned the lodging-houses built on Lord Rowton's plan, each to accommodate about eight hundred persons.

(6.) *Rural Housing.*—Rural housing should be briefly mentioned at this point, since urban and rural housing are intimately connected. We have seen from Table III. how, in consequence of the development of industries, the population of town and country has shifted. Rural housing is a serious problem, from the standpoint of the State as well as that of the town. The present condition of rural housing in England is not satisfactory. The situation has recently become acute, partly because a number of old—we may say, as above, under-normal—cottages have been evacuated. The Small Holdings Act is not sufficient to meet the needs of the agricultural labourer and of rural housing. Efforts are now being made to revive building activity in the country. It should be observed, it is true, that rents in the country are, in some parts, very low, and that their cheapness (1s. or 2s. per week) represents in many cases a portion of the workman's wage. It has been recommended from various quarters to apply the Irish method of cottage-building to England. The amount of loans sanctioned for the building of cottages in Ireland up to March 31, 1912, was £7,906,274. Up to 1909, the number of cottages built was 21,508, and was carried to 39,241 in 1912. It would also be desirable that employers in the country (as in many cases has already happened) would care for the dwellings of workmen and labourers in the same way as has been done in industrial districts. In any case the settlement of the rural population must be looked upon as an urgent duty, for land-flight is a source of evil not only for the country but also for the town.

2. **France.**—During the 'forties of the last century necessity had arisen for interference in Paris, Lyons, and in industrial districts (as in England; see above) in the conditions and state of town-building. But no great undertakings appeared until 1852, in the reign of Napoleon III., who saw that town-building could be made an important political lever. The entire reconstruction of Paris was begun, with the co-operation of Haussmann. A gigantic work was undertaken, in which property of enormous value was realized, only to

be considerably augmented, and thus newly created, through extensive building. Paris became the modern and vastly admired capital. Although it was in England that the new methods of town hygiene were studied, in matters concerning the general laying out, the construction of streets, and the monumental appearance of a town Paris became the influential prototype of the Continental town. The object was to present an imposing town with splendid streets, and with monumental or quasi-monumental architecture. But the system cannot be recommended from the point of housing. The result, especially as regards workmen's dwellings, is not satisfactory. In recent times housing by societies of 'public utility' has been promoted by an Act of 1894, suggested by Jules Siegfried, which grants tax reductions; and by an Act of 1908, which places State credit at the disposal of house-building. The municipality of Paris intends to grant £8,000,000 for house-building. The building of workmen's dwellings by employers was likewise promoted by Napoleon III., and has since been furthered by the large industrial firms and companies.

3. **Belgium and Netherlands.**—Belgium has preserved the individual house (see Table I.). Rents and land values are here—an exception to the industrial nations of the Continent—still lower than in England. The Belgian Housing Law of 1889 (an excellent measure) has had an important influence on modern housing methods. This law places funds from the National Savings Bank at the disposal of house-building by means of credit societies. A credit society can receive six-tenths of the value of a site if the debtor does not insure his life, and seven-tenths if, in contracting the debt, he insures his life. The credit society gives a further two-tenths of the value of the site, so that the buyer of a workman's house has only to pay one-tenth of the value. The whole loan is repaid, mostly in twenty-five years,

by annuities, which in general are not higher than the usual rent of a dwelling. The number of houses built with the help of the Savings Bank up to 1910 amounted to 49,861; the total number of dwellings erected out of loans from the credit societies may be estimated at a still higher figure.

The traffic regulations of Belgium have an important bearing upon housing. Throughout the kingdom there exists a system of cheap workmen's season tickets, which permits either a daily or weekly journey—leaving on the Monday, and returning on the Saturday. The daily ticket is available for short distances, and the weekly ticket for longer journeys—up to 120 miles. The railway season tickets have contributed to a favourable distribution of the population. The system has enabled a great number of workmen to retain their homes in the country or in the small towns, and yet to share in the advantages of the industrial market.

In the Netherlands the housing laws of 1901 and 1904 have created an effective organization, and, furthermore, opened state credit to promote the construction of houses. Building associations are very active in large and medium-sized towns. The new schemes in towns such as Arnhem, Delft, etc., generally show a very commendable type of the cottage. At Amsterdam, where the four-storied tenement building frequently occurs, in 1912 the specimen of the (two-storied) cottage flat has been successfully introduced.

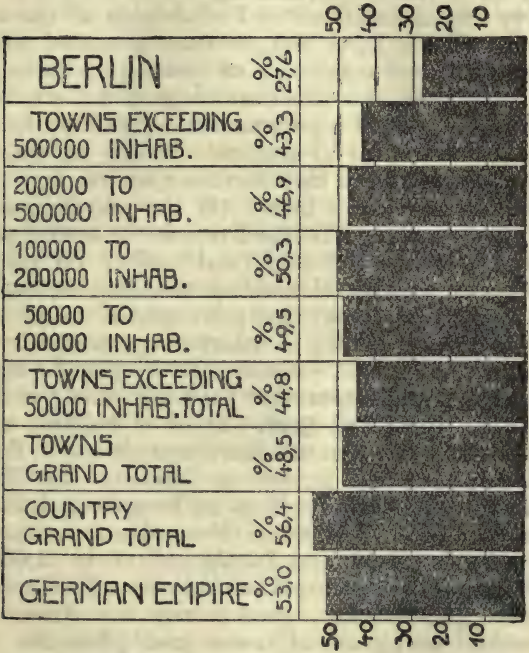
4. **Germany.**—Germany gives in the older parts of her towns the best and most studied examples of town-building, from the Middle Ages to the eighteenth century every period being represented by artistic types. Since 1870, however, the high-storied tenement system has penetrated the majority of the greater towns of Germany. The causes for this development, which differs as much from home traditions as it does from those of other nations, are three:—(1.) By the power of

town-planning (traditional in Germany) uniformly wide streets with expensive asphalt or granite paving only were made, plain residential streets with suitable accommodation not being admitted. The necessary complement of the costly street, however, is the high-storied tenement building, the landowner having to repay himself, by piling up dwellings one above the other, for the expenses of land given away and for the construction of the street. (2.) By-laws, too, were made uniform to apply to huge buildings, a minimum being fixed for thickness of walls, width of staircases, thoroughfares, etc., calculated for the high-storied building only, and thereby forcing it on the builder. (3.) A system of conveyancing and mortgaging by public land registration was initiated, giving every facility to land speculation, and making it safe to shift land and houses at an inflated price to nominal owners.

The streets may be called imposing, but the system of housing is, for its social, economical, and hygienic effects, not to be recommended. Efforts are being made to stop the victorious advance of land-inflation and the high-storied building (commonly termed the 'tenement barrack'). Municipalities in the western parts of the empire not controlled by the interests of landowners have inaugurated a model land and housing policy, some prominent examples being Ulm, Neuss, Gladbach, Bielefeld, Essen, and others. Much has been done by employers and industrial companies to house their huge staff of workmen; the new settlements of Friedrich Krupp, Essen, and others may, perhaps, be said to outrival the prototypes to be found in other countries.

Table IV. shows the figures of fitness for military service (year 1910), separate divisions being made for huge towns, medium-sized towns, and the country. Service being compulsory, the table gives the state of the whole nation, and not of a particular number of people. It appears that in huge towns the proportion is considerably below that of the country, whilst in Berlin (see p. 269) it falls to one-half of the average of the empire.

TABLE IV.



5. **The United States.**—In the United States the housing problem in many towns is, significantly, called the 'tenement-house' problem. The difficulties in housing show, in numerous cases, a decided parallel to the ingredients of population. Both factors seem to converge. The housing conditions of the lower and poorer classes are not satisfactory. On the other hand, it can be said that in many towns the typical American

workman earning a normal wage is suitably housed. By the statistics of the United States Labour Office, it appears that the workman's average income amounts to \$750, out of which an average of \$118½ has to be paid for a year's rent, making 16 per cent. of income. As we notice the town of Philadelphia at the top of our list (Table I., p. 269), it may be stated that the favourable local conditions of housing in Philadelphia are attributed by American experts to six factors, which almost form a programme :—(1) Cheap land and street development at reasonable cost; (2) dispersion of population and of manufacturing centres by a system of radiating railway lines; (3) the preponderance of the 'home-seeking' Teutonic race in the town's population; (4) cheap and easy local traffic; (5) supply of capital by activity of building and loan associations; (6) methods of conveyancing favourable to borrower or buyer. Town-planning in America is promoted by social reformers, architects, societies, and by popular support. Schemes of vast importance have been lately proposed.

6. **Land Value and Rent.**—Prices of building sites in working-men's residential districts are lowest in Belgium and England, and highest in Germany. In Belgium land for workmen's dwellings in Brussels and Antwerp averages £1,600 to £2,000 an acre in the town-extension districts; in Ghent and Lüttich, £1,000 to £1,600. In London prices may be said to vary from £500 to £3,000 an acre, £1,500 being a good average in town-extension districts. In provincial towns land prices are lower, a medium price of £700 an acre, or 3s. per square yard, being frequently met. We may draw, for European towns generally, the limit at £1,500, or in huge towns at £2,000 an acre, where the one-family workman's house can be built. If the value of land can be raised beyond that limit, the erection of tenement houses becomes compulsory. Building sites in Germany carry about seven to ten times the price which is paid in

Belgium and England. In Berlin a fair price for town-extension districts may be called £16,000 an acre, diminishing to £14,000 in the outer tenement-house ring. In other huge towns with the tenement-house system a medium price would be £12,000 to £10,000 an acre. The reasons for this development, which is opposed to natural conditions, have been hinted at above.

In comparing rent we have to consider—(1) The dwellings of various nations differ both in type and size; (2) within the same town rent may widely differ according to age of house and accommodation; (3) rent may, or may not, include taxation. Roughly speaking, the typical workman's cottage in the greater and industrial towns in Belgium may be said to vary from 2s. 9d. to 3s. 9d. weekly rent; in England, for the three to four roomed cottage, from 4s. to 5s. and 6s., or 1s. 3d. to 2s. per room; in Germany, for the two-roomed tenement, from 4s. to 6s. 6d. House tax in Germany is paid by the owner of the tenement house, and therefore included; but income tax has to be paid by the occupier if his income amounts to £45 yearly. English rents for working-class dwellings, as a rule, include local taxation.

7. **Bibliography.**—Charles Booth, *Life and Labour of the People in London.* William Thompson, *The Housing Handbook Up to Date* (London, 1907). De Veiller and Forrest, *The Tenement House Problem* (New York, 1908). Raymond Unwin, *Town-planning in Practice* (London, 1909). Rudolf Eberstadt, *Handbuch des Wohnungswesens und der Wohnungsfrage* (Jena, 1910). R. E.

Index Numbers. See MEASUREMENT OF INDUSTRIAL CHANGES.

Industrial Colonies. See UNEMPLOYMENT.

Industrial Revolution. See LABOUR; INDUSTRIALISM, HISTORY OF.

Industrial Unionism. See NEW LABOUR MOVEMENTS.

INDUSTRIALISM, HISTORY OF.

1. *Rise and Progress.*
2. *Chief Inventions up to 1840.*
3. *'Industrial Revolution.'*
4. *Industrial Evolution.*
5. *Chief Inventions after 1840.*
6. *Some Results.*

1. Rise and Progress.—The rise of Industrialism is usually assigned to the latter part of the eighteenth and the beginning of the nineteenth century. During this period the great change, which has been called the industrial revolution, took place. About the middle of the eighteenth century, or a little later, it began to assume a well-defined character, and entered on a course of rapid and continuous advance—at first in Great Britain, and afterwards in other countries. Its efficient cause was a series of capital inventions and discoveries, which transformed many existing industries, and created still more new ones. Its most prominent features were the application of mechanical power and the development of machinery, leading to the evolution of the 'grand' industry carried on in large establishments, and commonly called the 'factory system;' an enormous increase of production, with cheapening of commodities; a corresponding expansion of markets and of sources of supply, fed and opened up by the development of transport; the aggregation of the population in centres convenient for production and distribution, or, in other words, the growth and multiplication of manufacturing and trading towns, with a corresponding relative decline of the agricultural population—all involving great changes in the occupations of the people and in the conditions of life among them. No attempt can be made here to discuss these subjects in full. The object of the present article is to present a historical and statistical outline, indicating broadly the course and extent of the movement.

2. **Chief Inventions up to 1840.**—We begin with a chronological table of the more salient inventions and discoveries, which may be regarded as landmarks, during the first century of active advance. It gives a bird's-eye view of the movement; but the dates must be read broadly and with certain qualifications. They must not be taken to mean that any particular year marks the appearance of the machine or process associated with it as an entirely new thing, or in full working order. That is rarely the case. Many of the inventions commemorated have an antecedent history, sometimes going back for centuries; they were either improvements on previously existing and working appliances, or they represented earlier attempts and experiments brought at last to fruition. Almost all have a subsequent history of improvement, development, and practical application. Where the ideas are entirely new, they have very rarely been realized in practice at once. But the list includes a great range of variation in these respects. The dates are not selected on any uniform plan, because there is no uniformity in the circumstances. Some signalize the introduction of appliances in working order, fairly complete in certain cases, but more often rudimentary; others refer to the mere registration, by patent or otherwise, of an idea or suggestion which may have been continuously developed from the first or have only achieved realization long afterwards, perhaps by reinvention. For instance, the principles embodied in Cartwright's wool-combing machinery, patented in 1779, were not realized commercially for nearly a century. Several ideas fell to the ground altogether until independently revived. Such were the steam road locomotive built by Cugnot in 1769; the cylinder printing-machine suggested

by Nicholson in 1790; Saint's sewing-machine, and Street's internal combustion engine, patented about the same time; and Brunel's boot-riveting machine of 1810. But they are worth recording to show the prevailing fertility of ideas which anticipated many later inventions. Some of the dates given are only approximate, and may be disputed.

1735. Iron-smelting with coke introduced by Abraham Darby.
1738. The fly-shuttle for weaving invented by John Kay.
1738. Rollers introduced for cotton-spinning by Lewis Paul and John Wyatt.
1740. Casting of steel ingots from crucibles accomplished by Benjamin Huntsman at Sheffield.
1742. Electro-plating discovered by Thomas Bolsover of Sheffield.
1745. Important improvements made in the weaver's loom by Jacques de Vaucanson.
1758. Rib-knitting machine invented by Jedediah Strutt.
1764. Jenny for spinning cotton invented by James Hargreaves.
1767. Iron rails cast at Coalbrookdale iron-works.
1769. Steam locomotive for roads built by Nicholas Cugnot.
1769–75. Spinning-frame for cotton and carding-machine invented by Richard Arkwright; spinning-frame first operated by horse-power, afterwards by water.
1769–82. James Watt's all-important improvements in the steam-engine patented.
1777. First boat built of iron on the Foss in Yorkshire.
1779. Spinning-mule invented by Samuel Crompton.
1779. Combing-machines designed and patented by Edmund Cartwright.
1781. Compound steam-engine invented by Jonathan Hornblower.
1783. Grooved rolling-mill for bars introduced by Henry Cort.
1784. Puddling furnace introduced by Henry Cort.
1784. Steam-engine applied to cutler's wheel at Sheffield.
1785. Room illuminated with coal-gas by Minckelers (Louvain).
1785. Steam-engine applied to cotton-spinning in Nottinghamshire.
1785–92. Power-loom invented and patented by Edmund Cartwright.
1790. Cylinder printing-machine patented by William Nicholson.
1790. Sewing-machine invented by Thomas Saint.

1791–94. Explosive engines for gas and oil proposed and patent taken out by Robert Street.

1792–94. Saw-gin for removing seeds from raw cotton invented by Eli Whitney (United States).

1795. Hydraulic press invented by Joseph Bramah.

1798. Paper-making machine invented by Louis Robert; set up in England in 1803 by Henry Foudrinier and Bryan Donkin—the type still in use.

1799. Electric current produced by A. Volta.

1800. Power obtained from compressed air by G. Medhurst.

1801. Steam effectively applied to power-loom at Pollokshaws.

1802. First photographic image obtained by the action of light on nitrate of silver by Thomas Wedgwood.

1802. First practical steamboat worked on Forth and Clyde Canal by William Symington.

1802. First practical gas-lighting carried out by William Murdoch.

1804. Important weaving appliance perfected by J. M. Jacquard, called the Jacquard loom, and universally used ever since.

1804. Steam locomotive run on a railway by Richard Trevethick.

1804. Compound steam-engine designed by A. Woolf.

1807. First commercially successful steamboat built and run on the Hudson by Robert Fulton.

1807. First street gas-lighting in Pall Mall by F. A. Winsor (German).

1808–9. Bobbin net-machine (lace-making) invented and applied by John Heathcoat.

1810. Boot-riveting machine patented by M. I. Brunel.

1811. Blast-furnace gases utilized for heating by Aubertot.

1812. Reaping-machine invented by John Common.

1814. Printing-machine invented by Friedrich König and installed by the *Times*.

1815. Cast steel produced by Friedrich Krupp at Essen.

1816. First passenger steamboat crossed the Channel.

1818. Iron vessel, the *Vulcan*, built on the Monkland Canal (Scotland).

1819. Electro-magnetic experiments announced by H. C. Oersted.

1819. First steamboat crossed the Atlantic.

1820. Electric telegraph suggested by A. M. Ampère.

1824–30. Self-actor mule for cotton-spinning brought to completion by Richard Roberts.

1825. Stockton and Darlington railway opened for trains drawn by George Stephenson's engine.

1826. First practical reaping-machine invented by Rev. Patrick Bell (Scotland).

1827. Water turbine invented by Benôit Fourneyron.
1828. Ring spinning-frame invented by J. Thorpe.
1830. Practical sewing-machine invented by Barthélemy Thimmonier.
1830–41. The construction of machine tools (developed by Henry Maudslay from about 1800) placed on a scientific footing by the application of true plane surfaces and the principles of exact measurement by Joseph Whitworth.
1831. The dynamo electrical machine discovered by Michael Faraday.
1832. Jute industry established at Dundee.
1832–4. Sewing-machine with eye-pointed needle and lock stitch devised by Walter Hunt.
1836. Practical screw propellers patented (separately) by F. P. Smith and John Ericssen.
1836. Electric telegraphy established in practical form by Weber and Gauss in Germany.
1837. Electric telegraph further developed by Joseph Henry and S. F. B. Morse in the United States, and by W. F. Cooke and C. Wheatstone in England.
1838. Steam-hammer invented by James Nasmyth.
1839. Photography founded by Fox Talbot.

3. **'Industrial Revolution.'**—This bare chronological outline, covering a century, exhibits a growing intensity and expanding range of effort and an accumulating mass of results. The predominant, though by no means the only, feature is the invention and application of mechanical processes; and the supreme achievement is the effective utilization of steam-power accomplished by Watt towards the middle of the period covered. The coincidence of this event with the nearly simultaneous series of inventions in textile machinery, which eventually created the typical industrial communities of Lancashire and West Yorkshire, produces an impression of sudden and general change, which has been embodied in the term 'industrial revolution.'

The expression is convenient, and has been too long in use to be displaced now, but it is not well chosen. It was originally based on a misreading of the facts, and it tends to perpetuate a narrow and erroneous view.

Attention directed too exclusively and superficially to textile industries, and more particularly to weaving, resulted in a conception at once defective and exaggerated. A revolution is an event, but what took place was not an event; it was a large and gradual process of evolution, which involved the conversion of some domestic industries, but went far beyond that. Too much has been made of the cottage weaver. Regarded as a whole, the movement in the eighteenth century is seen to consist in an all-round expansion, affecting not only certain domestic industries and handicrafts, but also those which never were domestic, and in addition opening up vast and wholly new fields. It included not only machinery and power, but processes distinct from both, such as the improvements in the smelting of iron, which forms the first link in the chain of production. Without it there are no tools, and without tools even the raw materials cannot be wrested from nature or undergo the most rudimentary treatment. The metallurgical improvements in the production of iron and steel, recorded in the list, were quite as important in their place as anything else, and these never were domestic industries. Nor were mining and shipbuilding, both of which received a great impetus from the metallurgical advances.

In like manner the application of steam-power produced far more effect in creating and expanding non-domestic industries than in converting domestic ones. It is not too much to say that if the textile machines had never been invented the transformation of industrial life which marks this period would nevertheless have taken place, though it would have been less complete and striking. Such great industrial centres as Sheffield, Birmingham, Leeds, the Tyne, the Clyde, and the corresponding seats of metal-working industries in other countries would have developed very much as they did even if spinning and weaving had been carried on in the old way. Manchester itself would still have been a great manufacturing town.

But the idea of the industrial revolution requires further qualification. On the one hand, it left many handicrafts untouched; and on the other, it was not responsible for the introduction of the factory and the mill. Establishments in which a large number of persons were employed for wages were not new in the eighteenth century. We have mentioned mining, smelting, and shipbuilding; but there were many others, such as the manufacture of glass, soap, pottery, paper, and brewing. More than that, however: the 'factory system' had been established for centuries in those textile industries which are regarded as having been peculiarly domestic. Large factories, employing many hands, flourished as early as the fifteenth century in Holland, and probably earlier in Italy; they existed in England already in the seventeenth century, if not before. The development of machinery and of mechanical power in the eighteenth century enormously stimulated this method of manufacturing, but neither created it nor brought it suddenly to maturity. The application of both was gradual. The power-loom, though first patented in 1785, was not effectively installed until 1801; and in 1813 only 2,400 were known to be in use. By 1820 they had increased to between 14,000 and 15,000; but the hand-looms had also increased, and were estimated to number over 200,000. In 1835, half a century after the first appearance of the power-loom, there were still more than twice as many hand-looms at work in the cotton trade. Yet the hand-loom weaver is the classical case of the worker owning his own implement, until deprived of it by the machine. A change which was so far from complete after the lapse of two generations cannot be properly called a revolution.

Nor was there anything final about it. The latest phase of industrial evolution is a marked revival of handicrafts and home-working, to which the machine itself has contributed in a powerful and unexpected manner, and in different forms. One of these is the development of the hand machine, of which the sewing-machine is the most important type. This implement is found in millions of homes. Its domestic use has developed alongside of the clothing factory, and plays a great part in modern production. The largest industry in France is dressmaking, and most of it is carried on by home work. Another more recent and more general agent is the distribution of power by means of electricity. Notable instances of its application in preserving and fostering home work are to be found in the silk industry in France, where power, obtained from mountain rivers on the flanks of the Alps, is distributed to the cottage looms of the Lyons district, which have never wholly died out; and in the cutlery industry at Solingen, Germany, where the greater part of the work is carried on at home, or in small workshops, in which men, working on their own account, hire a sitting. The concentration caused by the steam-engine is now being counteracted by a dispersing movement promoted by electricity. The power is taken to the people instead of their coming to it. If, as seems probable, power is ever obtained from other natural sources, such as the tides, a new movement will set in.

4. **Industrial Evolution.**—All this goes to show that the period under review only represented a phase in a vast and complex process which is still going on, and that generalizations drawn from particular features of it have a limited application. The essence of industrial evolution is not the substitution of the grand for the small industry, or even the supremacy of the machine, but something much larger. It is *the mastery of nature in the service of man*, and for its origin we must go back to the beginnings of science—to the search after know-

ledge which followed the revival of learning. The mediæval attempts to square the circle, find the philosopher's stone, and produce perpetual motion were the early gropings of the spirit which has produced the steam-engine, the dynamo, wireless telegraphy, the aeroplane, and synthetic rubber. The mastery of nature in the service of man is the one guiding purpose running through the whole story. This is, in fact, what we call civilization and progress. It was clearly seen and formulated by Francis Bacon, but had been unconsciously at work long before his time. Leonardo da Vinci was the great practical pioneer in the fifteenth century. Mankind had to wait long for fulfilment, because the road to be traversed was long. The forces of nature are only mastered by observation, research, and experiment, as Bacon's great namesake perceived less distinctly, but with still greater prescience, three and a half centuries earlier; and these principles work very slowly. The genius may have his vision, but realization is a toilsome business.

Fruition came so richly in the eighteenth century through a combination of causes. One of these was the accumulation of effort and experience, very clearly illustrated by the case of the steam-engine, which presents a continuous record of advance from Della Porta's scientific treatise in 1601 to Savery's working pump at the end of the same century, closely followed by Newcomen's engine. All through the history of industry we see this process of step-by-step advance, accelerated as time goes on by the increasing number of men engaged on any particular problem—that is to say, both experience and effort accumulating. A second cause was the command of means gained through trading, which preceded industrial expansion. It furnished wealth, which facilitated experiment and the erection of plant, and at the same time stimulated industrial enterprise by example. It demonstrated the accessibility of wealth, and thus helped to give a practical turn to discovery and invention. A third cause, working in the same direction, was the pressure of increasing population, which so perturbed men's minds in the latter part of the eighteenth century. The final cause of effort is life—its preservation and its increase; more life and fuller life. This need not be consciously felt, and often is not. The true pioneer sees only his idea, and is driven by an inward craving to realize it; but its practical utilization springs from economic motives, and varies with the strength of economic pressure.

These considerations apply both to mechanical invention and to scientific discovery. We recognize a distinction between them, and at the opposite ends of the scale they are far apart; but no dividing line can be drawn between them. They work at the same problem, though at different points of it, and essentially in the same way, by experiment; for effective application each has need of the other. Successful machines must be constructed on scientific principles, and special apparatus is required for the commercial utilization of scientific knowledge. The more closely the two co-operate, the better the result. The most striking illustration is afforded by the evolution of machine tools. When the right forms of appliance for performing various operations had been hit upon and machines began to multiply towards the end of the eighteenth century, the problem of constructing them with an accurate adjustment of parts presented itself. Its solution began in the workshops of Henry Maudslay and his partner, Joseph Clement, on the Thames, but was not completed until Joseph Whitworth, their pupil, laid down the scientific principles of machine construction about 1830. The whole marvellous apparatus of modern mechanical production is based on them, and would have been impossible without them.

Mechanical invention came earlier to fruition than applied science. That is very clearly demonstrated by the chronological list given above, in which the former is predominant, until we approach the close of the period, when pure science appears in the form of electrical research. The order is not accidental, but in the nature of things. The chief difference between the two is that invention deals with means, with tools, and apparatus; while science is concerned with matter, with physical principles, and the hidden forces of nature. The latter is far the larger and more difficult field, requiring more time and effort for its exploration; hence the slower conquest. In the later development of industry science has played the principal part, and has become more and more predominant. Its greatest practical achievement is the mastery of electricity. The steam-engine, which dominated the beginning of the nineteenth century, yields place to the dynamo and the motor at the beginning of the twentieth; the electric furnace displaces fuel; the electric lamp supersedes oil and gas; and electrical communication continues its triumphant conquest of space. From the first the seizure and taming of this prodigious but invisible force has been accomplished primarily by men of science, whose name is legion—from Gilbert in the sixteenth century down to Kelvin and Hertz, seconded by a host of technical inventors. But science dominates modern industry in a far more comprehensive if more subtle way through the multitudinous influences of applied chemistry, which pervades every field of production, and ceaselessly transforms them all, from metallurgy to farming. Its operations are fundamental, and their range without limit.

Not that mechanical invention of the old kind has ceased. The latter part of the nineteenth century witnessed the transformation of the boot industry on the old lines by the substitution of machinery for hand processes, through a series of inventions, beginning with the sole-stitching machine devised by L. R. Blake and G. Mackay. It was the last of the old common industries to yield, because the article is individual, and the hand operations are the most difficult to imitate. The modern development of the automatic principle in all sorts of processes, notably illustrated by machine tools and the automatic loom, as well as innumerable small improvements in machinery of all kinds, may also be placed in the same category. But for the most part invention has become more and more clearly the handmaid of science. The most important mechanical appliances perfected in recent years are the dynamo and the electric motor, the internal combustion engine and the steam turbine. They are all modes of power, and they are not merely based on scientific principles, but are the work of men with a scientific training, who could apply those principles in practice.

5. **Chief Inventions after 1840.**—The change may be studied by comparing the following list, which gives the chief landmarks of advance during the last seventy years, with the previous one.

1840. Von Liebig's chemistry in its application to agriculture appeared, leading to experimental farming and the development of fertilizers.
1845. Submarine cable proposed by J. W. and J. Brett.
1845. Revolving printing-press patented by R. M. Hoe.
1846. Hydraulic crane invented by W. G. Armstrong.
1846. Sewing-machine invented by Elias Howe.
1847. Cast-steel guns produced by Alfred Krupp.
1850. Wool-combing machine perfected by S. Lister and I. Holden.
1851. First industrial exhibition held in London.
1851. Submarine cable laid between Dover and Sangatte by T. R. Crampton.
1854–67. Wood pulp for paper introduced.
1856. Bessemer process for steel-making announced by H. Bessemer.
1856–61. Regenerator furnace devised by William and Friedrich Siemens.

1857. Advances in the construction of dynamos by Werner and William Siemens.
1858. Aniline dyes discovered by W. H. Perkin.
1858–60. Sewing-machine applied to boot-making by L. R. Blake and G. Mackay.
1859. Practical gas-engine invented by J. J. E. Lenoir.
1861. Pneumatic drills successfully used in Mont Cenis Tunnel from American patent designs (about 1849).
1862. Automobile car driven by gas-engine built by J. J. E. Lenoir.
1864. Open hearth steel furnace devised by Martin Frères on the Siemens regenerator system.
1865. Steam-plough introduced by John Fowler and Co.
1867–76. Gas-engine perfected by N. A. Otto.
1868. Alloy steel (tungsten) brought into use by R. Mushet.
1870. First petrol-engine made by J. Hook.
1870. Improved dynamo introduced by L. T. Gramme.
1870. Steel began to come into general use for shipbuilding.
1873. Electric motor discovered through reversible action of Gramme dynamo, leading to transmission of power.
1876. Electric telephone invented by G. Bell.
1876–80. Electric lighting advanced by Jablochkov, Brush, Swan, and Edison.
1877. Phonograph patented by T. A. Edison.
1878. Basic process of steel-making introduced by S. G. Thomas.
1879. Harvesting (reaping and binding) machine perfected.
1880. Synthetic indigotin obtained from coal-tar products by A. von Bayer.
1883. High-speed oil-engine invented by G. Daimler.
1884. Steam-turbine invented by C. A. Parsons.
1886–7. Motor bicycle and car run with petrol-engine by G. Daimler.
1889. Steam-turbine invented by G. de Laval.
1894. Automatic loom invented by J. H. Northrop.
1896. Wireless telegraphy effectively accomplished by G. Marconi.
1897. Electric furnace devised by H. Moissan.
1900. Motor-driven airship completed by F. von Zeppelin.
1900. Alloy steels applied to high-speed machine tools by Messrs. White and Taylor.
1906. Petrol-driven aeroplane successfully flown by A. Santos-Dumont.
1912. Synthetic rubber announced by English chemists.

The list shows sufficiently, though imperfectly, the growing dominance of science. Many of the achieve-ments enumerated represent ideas put forward generations and even centuries earlier, but only realized through the gradual advance of scientific knowledge. The unlearned artisan inventor is not extinct, but his part comes more and more to be confined to small improvements. The change in the character of invention has tended to internationalize the advance of Industrialism. Science knows no geographical boundaries, and the old plan of securing the sole use of a machine for the country of its origin has become impracticable. It was never long successful, but now it is seldom attempted. In former days, however, priority of invention exercised an important influence. It was largely instrumental in giving this country its manufacturing supremacy in the eighteenth and nineteenth centuries. The items recorded in the first list reveal an overwhelming preponderance of British invention, with France in an honourable but secondary place. These two almost monopolized the field in the eighteenth century. America did not come in until 1792, when Whitney's saw-gin completed the cycle for the cotton industry, and rendered possible the supply of raw material required to feed the voracious machines of Lancashire. Germany did not appear until still later.

The reasons for this order are various, but we have certainly counted too much upon it, and have been inclined to credit ourselves with some superior faculty denied to other nations. A fairer appreciation of the share of France should have dispelled the error; for the early French contributions to metallurgy and textiles were of first-class importance. The French are a highly inventive as well as a scientific people, and they have more than held their own in recent years. But meantime Germany and the United States have come fully into the industrial field. Their place in the second period presents a striking contrast with that in the first; but there is a marked distinction between them. The principal American contributions are in the line of British tradition, and are mainly examples of mechanical ingenuity. The sewing-machine, boot-making and agricultural machinery, the typewriter, and the general development of the automatic principle, are all of this character. They are rather completions of the mechanical series than large and original advances in new directions. Germany, on the contrary, has found her place in the more scientific sphere—in electricity, the internal combustion engine, and, above all, in chemistry. Thus Great Britain has been rivalled in both fields and on all sides, and is not even *primus inter pares*. Since the discovery of the Bessemer process and of aniline dyes (of which she made no use) in the 'fifties, her only contribution of first-rate importance is the steam-turbine. The basic steel process is rather a technical improvement than a new departure; and the automatic loom, though invented by an Englishman, was brought to practical success in America.

6. **Some Results.**—Advances made in one country are now speedily shared by others, as we have said, but the active participation of many nations in the work of advance means more than this. It implies a keen competition, which is stimulated by economic pressure. Industrialism is forced upon one nation after another for the maintenance of a growing population in a rising standard of comfort. The latter element should not be overlooked; it is still active in a stationary population, as in France. The people must be fed, clothed, and housed; and the various factors concerned in fulfilling these requirements are constantly raising their demands under the influence of advancing knowledge directed to the preservation of life. Life constantly grows more exacting even where it does not increase. Thus nations must produce—first, in order to supply their own multiplying and expanding needs so far as they can; and secondly, to buy what they

cannot themselves supply. Invention and discovery applied to industry have enabled this process to be carried on; without them the population would become stationary when and where the limit of food supply was reached, and its condition would be stagnant. They have created abundance by multiplying many times man's power of production, by increasing the fruits of the earth, by peopling and working new lands, and by bringing the results together in a world-wide network of exchange. The vast and general improvement in material conditions thus produced is seldom realized because the standard has risen with it, and continually formulates fresh demands.

The part played in all this by different nations varies according to their needs, their aspirations, their capacity, and energy. The effects are seen primarily in the growth of population and in changes of grouping by locality and occupation. Rural life yields to urban, and agricultural occupations to industrial and commercial. The process may be summed up in one word—the town. The development of the town is the outstanding feature of Industrialism; it marks every industrial country. England, which led the way, is the classical example, and we have statistical evidence of the movement since 1801. The following table gives the population and density per square mile at each census:—

ENGLAND AND WALES, 1801–1911.

Year.	Population.	Persons per sq. mile.	Year.	Population.	Persons per sq. mile.
1801	8,892,536	153	1861	20,066,224	344
1811	10,164,256	175	1871	22,712,266	390
1821	12,000,236	206	1881	25,974,439	446
1831	13,896,797	239	1891	29,002,525	498
1841	15,914,148	273	1901	32,527,843	558
1851	17,927,609	308	1911	36,075,269	619

The population of Scotland increased in the same period from 1,608,420 to 4,759,445, and its density from 54 to 160 persons per square mile. The increase for Great Britain was from 10,500,956 to 40,534,714. The significance of the increase thus recorded in the era of industrial expansion cannot be fully appreciated without reference to the antecedent period. No exact enumeration took place before 1801, but the census of 1851 gave the following centennial comparison, carefully computed from various dates, as approximately correct:—

	Estimated population of Great Britain, etc.	Increase in the century.
1651	6,378,000	—
1751	7,392,000	1,014,000
1851	21,185,000	13,793,000

The difference is not, of course, wholly due to the industrial factor; but the two go together, and the vast increase of life during the second century negatives the common assumption that Industrialism produced a state of unprecedented and increasing misery. This is emphasized by the fact that the rate of increase was highest during the first decades of the nineteenth century, when the change was proceeding at its maximum intensity. The rates of increase in England were: 1801–11, 14·50 per cent.; 1811–21, 18·05 per cent.; 1821–31, 16·24 per cent.; 1831–41, 14·58 per cent. These rates have only been approached in one subsequent decade—that of 1871–81—which included several years of the highest prosperity on record, when the rate was 14·5 per cent. The rising tide of vitality revealed by statistics is in keeping with the observations of the French traveller Louis Simond, quoted by Professor Smart,* in 1810–11: 'I have found the great mass of the people richer, happier, and more respectable than any other with which I am acquainted.'

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* *Economic Annals of the Nineteenth Century.*

The growth of population recorded above took place mainly in the towns. Some comparative information for the first half of the nineteenth century is given in the census of 1851. There were in that year seventy towns of 20,000 inhabitants and upwards in Great Britain. Their population had increased from 3,181,595 in 1801 to 8,803,897 in 1851, or at the rate of 189 per cent.; whereas the population of the country and of the smaller towns had increased only by 71 per cent. In 1801 these towns formed 23 per cent. of the whole population; in 1851 the proportion had risen to 34 per cent. The same movement has since continued at a greater pace. In 1911 towns of this size accounted for 61 per cent. of the population in England and Wales. The technical division into 'urban' and 'rural' gives the proportions as 78 per cent. urban against 22 per cent. rural; but during the last decade—1901–11—the rate of increase has fallen among the urban, and risen among the rural, population. The table on page 306 shows the expansion of the chief towns.

With the exception of Brighton and Croydon, which are residential appendages of London, and perhaps Portsmouth, all these thirty-six towns owe their enormous expansion to industry and commerce; and behind them is a far larger series below the 100,000 limit, created by the same forces.

The corresponding occupational movement cannot be shown with equal precision, because of defects and changes in the census; but the progressive decline of agriculture relatively to other occupations throughout the period is clearly marked. Between 1811 and 1831 the proportion of families employed in agriculture in Great Britain fell from 35 to 28 per cent. of the whole, and in 1821–31 the decline was absolute. From 1851 onwards the census was more uniform, and tells a plain tale. The number of males over ten years of age employed in agriculture in England and Wales fell

TOWN.	1801.	1851.	1911.
London	958,863	2,362,236	4,522,961
Manchester with Salford	94,876	401,321	945,807
Liverpool	82,295	375,955	746,566
Birmingham	70,670	232,841	525,960
Leeds	53,162	172,270	445,568
Sheffield	45,755	135,310	454,653
Bristol	61,153	137,328	357,059
West Ham	—	—	289,102
Bradford	13,264	103,778	288,505
Hull	29,580	84,690	278,024
Newcastle	33,048	87,784	266,671
Nottingham	28,801	57,407	259,942
Portsmouth	33,226	72,096	231,165
Leicester	17,005	60,584	227,242
Cardiff	—	18,351	182,280
Bolton	17,966	61,171	180,885
Croydon	—	10,260	169,559
Sunderland	24,998	67,394	151,162
Oldham	21,677	72,357	147,495
Blackburn	11,980	46,536	133,064
Brighton	7,268	69,673	131,250
Birkenhead	110	24,285	130,832
Derby	10,832	40,609	123,433
Norwich	36,238	68,195	121,493
Southampton	7,913	35,305	119,039
Preston	12,174	69,542	117,113
Gateshead	8,597	25,568	116,928
Swansea	10,117	31,461	114,673
Plymouth	16,040	52,221	112,042
Stockport	14,830	53,835	108,693
South Shields	11,011	28,974	108,649
Huddersfield	7,268	30,880	107,825
Coventry	16,034	36,812	106,377
Burnley	3,918	20,828	106,337
Middlesbrough	—	7,431	104,787
Halifax	12,010	33,582	101,586

from 1,544,087 in 1851 to 1,153,185 in 1901, and from 23·5 to 9·5 per cent. of the occupied males; the females declined still more rapidly—from 168,652 (2·4 per cent.) to 38,982 (0·3 per cent.). The place of agriculture has been taken by industry and commerce. But a change has taken place in this respect during the last thirty years. Manufactures do not advance as they did, but tend to decline in occupational importance. Textiles, in particular, have undergone a marked decline in relative position. The greatest advances have been made in coal-mining, commercial occupations, and transport. This change is reflected in the table of towns given above. From 1801 to 1851 the population of the manufacturing towns advanced the most rapidly; but in recent years they have undergone less expansion than the ports and trading centres.

In no other country has the process of industrialization been carried so far as in Great Britain; but it has touched all vigorous and aspiring nations in some measure. The same signs are visible in them—namely, a relative decline of agricultural occupations and rural population, and with an increasing aggregation of the people in large towns—though they have hitherto maintained a more even balance. The following statistical data for France, Germany, and the United States indicate the movement in those countries.

France.—Between 1801 and 1911 the population increased from 27,000,000 to 39,600,000, and its density from 130 to 189 persons per square mile. The rate of increase was less than 50 per cent., against 360 per cent. in Great Britain during the same period. The population is now stationary or declining, but the movement from country to town goes on.

Between 1846 and 1906 the 'rural' population declined from 75·6 to 57·9 per cent. of the whole, and the 'urban' increased from 24·4 to 42·1 per cent. In 1911 there were fifteen towns with a population exceeding 100,000, of which three exceeded half a million, and one (Paris) two million inhabitants. Nevertheless the proportion of the occupied population engaged in agriculture, forestry, and fishing was 44 per cent. in 1906. In England and Wales the same class only represented 8 per cent. of the occupied population in 1901. The corresponding proportion for Germany is 35 per cent. (1907), and for the United States 36 per cent. (1900). The comparative position of agricultural occupations in England and the three other countries revealed by these figures is of the utmost economic significance. It shows a state of relative dependence on industry and transport for the maintenance of the population, which must qualify all statistical comparisons of trade.

Germany.—Between 1816 and 1910 the population increased from 25,000,000 to 65,000,000, and its density from 119 to 310 persons per square mile. The increase over the whole period was at the rate of 280 per cent.; but it has proceeded more rapidly during the last twenty years than at any previous period, and at the same time the industrial and urban movement has made the most rapid advance. Between 1871 and 1905 the rural population diminished from 63·9 to 42·6 per cent., and the urban increased from 36·1 to 57·4 per cent. In the same period the number of towns with a population exceeding 100,000 increased from eight to forty-one, and further to forty-eight in 1910. Seven of these exceed half a million, and one (Berlin) two million inhabitants. The great towns of Germany have expanded more rapidly in recent years than those of any other country.

With regard to occupations, the movement is shown by the following:—

PERCENTAGES OF OCCUPIED POPULATION.

	1882.	1895.	1907.
Agricultural	42·5	35·7	35·1
Mining and industrial . .	35·5	39·1	40·0
Commercial	10·0	11·5	12·3

United States.—Between 1800 and 1910 the population increased, largely by immigration and extension of territory, from 5,308,483 to 91,972,266; while its density rose from 6·1 to 30·9 persons per square mile. The rate of increase has been falling in recent decades. Between 1880 and 1910 the 'rural' population declined from 70·5 to 53·7 per cent. of the whole, and the 'urban' rose from 29·5 to 46·3 per cent. In the same period the number of towns with a population exceeding 100,000 rose from nineteen to fifty, of which eight have more than half a million inhabitants, three more than a million, and two more than two million.

The occupational movement is shown by the following table :—

PERCENTAGES OF OCCUPIED POPULATION.

	1870.	1900.
Agricultural	47·5	35·6
Mining and manufacturing	21·4	24·3
Trade and transport	9·9	16·3

The great increase in trade and transport is due mainly to the development of railways and shops. In the mining and manufacturing group the largest advance has occurred among coal miners, iron and steel workers, and machinists. A. S.

Infantile Mortality. See PHYSICAL CONDITIONS, ETC.

INSURANCE, HEALTH.

For a detailed account of the National Insurance Act (1 & 2 Geo. V.), see 'Insurance,' *Nelson's Encyclopædia,* and also the numerous leaflets, orders, and circulars issued by the Commissioners.

The present account is of purpose restricted to a brief history of the conception and birth of the Insurance Bill of 1911 and a succinct review of its working (so far). Without some acquaintance with its history, it is not possible to understand or measure the good or the bad working of so vast a measure of economic and social reform.

The History of the Scheme.—The idea of National Provident Insurance has been long in the air. Not to go back in detail to ancient history, the late Canon Blackley issued the framework of a scheme in 1879, which was subsequently taken up by different statesmen, notably the Right Hon. Joseph Chamberlain, and from time to time altered in its methods and field of operations. The original idea was, that every individual in the nation, on reaching eighteen years of age, was to compulsorily contribute £10 to a State agency, or, in the case of the industrial classes, to pay the same in weekly instalments of 1s. 3d. between eighteen and twenty-one years of age, the employer making the deductions from wages, and paying them, through the Post Office, to the State. It is noteworthy that, except for the lengthening of the time-limit in the case of apprenticeships, contributions were made payable in many cases before the insured person (male) was, or had only been for a twelvemonth, in receipt of full wages—he was only a 'half-man.' The woman only paid while she was a girl. The benefits were 8s. a week sick pay till seventy years of age, with an old age weekly pension of 4s. Subsequently, owing to the open opposition of the Friendly Societies, the sickness insurance part was dropped, and the pension at seventy years of age put five years forward, the round sum of £10 total contribution remaining the same. The scheme, also, was practically restricted to the wage-earner, who, for the purposes of the project, was defined as 'a man who could contract with his doctor for medical attendance at 4s. a year.'

This restricted contributory pension proposal (which omitted medical benefit) was presently challenged by the universal Endowment of Old Age Scheme of the Right Hon. Charles Booth. At Manchester (1902) the Friendly Societies, always opposed to a State or State-assisted contributory pension scheme, through the National Conference adopted a resolution in favour of Old Age Pensions 'of not less than 5s. a week for all thrifty and deserving persons of sixty-five years of age and upwards, who were unable to work and in need of the same,' and that the necessary moneys should be raised 'without any interference with the funds of Friendly Societies.' This resolution was subsequently embodied in a scheme for the consideration of the societies and the Government of the day.

After taking office, the Liberal Government (1906–8) took the whole matter of National Insurance and Pensions into consideration. With the approval of the Friendly Societies, Trade Unions, and other associations representing Labour, an Old Age Endowment or Pension Scheme, as a first instalment of a comprehensive project, was taken in hand, resulting in the Pensions Act of 1908, and leaving the ground clear for an insurance scheme to cover the working period of industrial life. Nearly a million of the veterans in the ranks of Labour were in the enjoyment of free pensions to the amount of £11,000,000 per year, over nine in every ten being in receipt of the full pension of 5s. a week, before the State National Insurance measure became law.

The Government now turned to preparation for the *second portion* of its vast social scheme, National Health Insurance and Unemployment Insurance. Attention had been directed to the Friendly Societies from the continued agitation for amendment of the Act of 1896, resulting in the Amending Friendly Societies Act of 1908, afterwards incorporated in the former Act. As has been shown (see FRIENDLY SOCIETIES), increase in the more developed types of voluntary mutual thrift had practically ceased as regards membership in the United Kingdom. The premier societies (the Manchester Unity of Oddfellows and the Ancient Order of Foresters) barely held their own, while with many other kindred societies retrogression had set in.

The Chancellor of the Exchequer, Mr. Lloyd-George, the projector of the new scheme, early in 1909 called in for consultation the Committee of the National Conference of Friendly Societies as the best representative body of the same. Frequent meetings were held, the negotiations being necessarily of a private and confidential character. By October 1909 the following guiding principles were reported to the annual meeting of the Conference :—

The Government did not propose to start an opposition ‘ shop ’ to the societies.

They were desirous of bridging over the working period of life up to seventy years of age, at which old age endowment commenced, for those persons who were handicapped in the race through physical disability and invalidity, also to assist widows and orphans, tuberculosis cases, etc.

They were not disposed to continue support to those who refused to make any provision for themselves, but expected other persons to bear their burdens—

willing to tap any and every source of relief (Poor Law and charity), but contribute nothing.

They did not propose to enforce State interference upon the Friendly Societies more than it already existed.

They had no intention of asking that the morale of the existing members should be lowered by the admission of undesirable persons into their brotherhoods.

They could not countenance any but sound permanent societies. They had given an assurance that nothing should be held binding upon the societies until the matured scheme had been before them to consider and express their views upon.

Consultations were continued (1910); but the historic Budget of the Chancellor of the Exchequer for 1909–10, which was to provide the money, was delayed, and finally the Finance Bill was 'hung up' by the House of Lords in November 1910, until it should be 'submitted to the judgment of the country.'

Another General Election followed, and the Budget only became law on April 29, 1911, twelve months after its introduction; hence the Insurance Bill did not come to birth until May 4 of that year, three years after its conception. The Bill that then saw light, the Friendly Society advisers of the Chancellor complained, was not the child they had assisted to bring to birth. The Bill, as first drafted in accordance with the conclusions arrived at by the Friendly Societies' select consultative committee, was in brief as follows:—

Benefits—

(*a*) Medical attendance and medicine for insurers at	4s. a year.
(*b*) Sickness benefit (not exceeding twenty-six weeks) . . .	5s. a week.
(*c*) Disablement allowance (beginning when (*b*) ceases) . . .	5s. a week.

(*d*) Allowance to widow having child (or children) under sixteen dependent upon her . . .	5s. a week.
(*e*) Allowance to fatherless child under sixteen	1s. 6d. a week.
(*f*) Allowance towards sanatorium benefit	1s. a week.
(*g*) Maternity benefit, paid to male insurer, in respect of each confinement of his wife . . .	20s.

Contributions.—Not inserted in the draft, as the Government actuaries had not issued their report.

Machinery of Administration, etc.—The Act to be entirely administered through approved Friendly Societies of a permanent character. Each worker to be required to chose his approved society within a given time-limit, failing which to be assigned to one or other of the approved societies.

Membership to be compulsory, but only so far as the prescribed scheme of benefits under the Act went.

Power of rejection of applicants upon certain defined grounds.

Such ‘rejects’ to be excluded from the National Insurance Scheme altogether, and left to the operation of the Poor Law.

As regards the machinery to be employed — approved Friendly Societies giving permanent sick pay —and the regulations for the working of the same, the following points were to be observed :—Existing members whose present benefits were equal to or in excess of the contribution under the scheme, and all future members who become insured for benefits in excess, should be exempt from deduction from wages by employers, and should be allowed to pay direct to their society. The employer's contribution, with that of the insured contributor, when collected by the employer by deduction from wages, to be paid over to the State by the employer. All amounts, together with the Government additions to the contribution, to be paid over to the societies concerned monthly.

It is evident that, as the sickness benefit on the State side would only be 5s. per week, practically all existing members of Friendly Societies would claim the proposed exemption from deduction by employers, and the vast bulk of the new insurers as well. The State sickness benefit alone would have been totally inadequate. The scheme would have been only one of present Friendly Society benefits, with half, or rather less than half, paid for by employer and State. The proposal was merely one of assisting the insurer to obtain an inadequate sickness benefit, which he must voluntarily himself, at his own charges, necessarily increase. If contributions were to be subsidized, it was essential that they should be adequate on the State side to secure a living benefit—something more than reduced half sick pay.

The Chancellor took counsel, earlier or later, with other public bodies concerned, or likely to be concerned, in a National Insurance Scheme, such as the Trade Unions, Deposit Societies, Collecting Societies, and Industrial Assurance Companies, the medical profession, and representatives of political, municipal, commercial, and agricultural bodies, not overlooking Labour associations. On May 4, 1911, Mr. Lloyd-George introduced the Government Bill into the House of Commons, on the understanding that time should be given to the Friendly Societies and other associations of the Labour classes to examine and report upon the Bill before it reached the Committee stage.

The benefits were the number of the fingers of one hand:—(1) Medical benefit; (2) Sickness benefit; (3) Disablement benefit; (4) Sanatorium benefit; (5) Maternity benefit; with, under conditions, an extra finger for additional benefits.

A.—NORMAL WEEKLY CONTRIBUTIONS OF EMPLOYED INSURERS (MALE AND FEMALE), WITH SICK AND DISABLEMENT BENEFITS.

Weekly Contributions till 70.			Weekly Benefits till 70.		
	Men.	Women.		Men.	Women.
I.—21 (*under, if married, and minors with members of family dependent on them*) *and under* 50, *earning above* 15/- *per week.*					
Worker	4d.	3d.	26 weeks' sick pay	10/-	7/6
Employer	3d.	3d.	Disablement pay, after 104 weeks' contributions	5/-	5/-
II.—*Over* 50 *and under* 60.					
Worker	4d.	3d.	26 weeks' sick pay	10/-	7/6
Employer	3d.	3d.	Disablement pay, after 104 weeks' contributions	5/-	5/-
			26 weeks, if 500 weeks' contributions not paid by date of sick claim	7/-	6/-
			Disablement pay, after 104 weeks' contributions	5/-	5/-
III.—*Over* 60 *and under* 65.					
Worker	4d.	3d.	First 13 weeks	6/-	6/-
Employer	3d.	3d.	Second 13 weeks	5/-	5/-
			Disablement pay, after 104 weeks' contributions	5/-	5/-
IV.—*Over* 65 *and under* 70.					
Worker	4d.	3d.	First 13 weeks	6/-	6/-
Employer	3d.	3d.	Second 13 weeks	5/-	5/-
			No disablement pay.		
V.—*Under* 21, *if unmarried and without dependants.*					
Worker	4d.	3d.	First 13 weeks	6/-	5/-
Employer	3d.	3d.	Second 13 weeks	5/-	4/-
			Disablement pay to 21	5/-	4/-
			Disablement pay, as above, at 21	5/-	5/-

B.—PERSONS OF 21 AND UPWARDS, WITH EARNINGS NOT ABOVE 15/- PER WEEK.

Weekly Contributions till 70.			Weekly Benefits till 70.	
	Men.	Women.	Men.	Women.
I.—21 *and upwards, earnings exceeding* 12/- *a week* (2/- *a day*), *but not* 15/- *a week* (2/6 *a day*).				
Worker	3d.	3d.	Same as No. 1 of A (see note below).	
Employer	4d.	3d.		
II.—21 *and upwards, earnings exceeding* 9/- *a week* (1/6 *a day*), *but not* 12/- *a week* (2/- *a day*).				
Worker	1d.	1d.	Same as No. 1 of A (see note below).	
Employer	5d.	4d.		
III.—21 *and upwards, earnings not exceeding* 9/- *a week* (1/6 *a day*).				
Worker	0d.	0d.	Same as No. 1 of A (see note below).	
Employer	6d.	5d.		

Note.—Over 50 at time of insuring, benefits same as No. 2 of A.
" 60 " " " No. 3 of A.
" 65 " " " No. 4 of A.

C.—VOLUNTARY CONTRIBUTORS: PERSONS WORKING ON THEIR OWN ACCOUNT.

Men.	Women.	Men.	Women (Unmarried).
I.—*Persons below* 45 (*if insured before January* 15, 1913).			
7d. (3d. + 4d.)	6d. (3d. + 3d.)	Full benefits, as in No. 1 of A.	
II.—*Persons below* 45 *not insured before January* 15, 1913, *and all persons over* 45 *and not exceeding* 65.			
Graduated contributions according to age of insured person.		Full benefits, as in No. 1 of A.	

Keeping to the sickness benefit, it is seen to be far superior to that of the Friendly Societies' draft, which was quite inadequate (as shown), without as much again being added on the voluntary side of an approved society. In the first instance, it was full sick pay for the first thirteen weeks, followed by half pay for the second thirteen weeks. But on complaint that benefits did not commence until the fourth day of illness—a wise reservation of the Government actuaries as a protection against malingering—Mr. Lloyd-George increased the full sick pay to twenty-six weeks, which was beyond an equivalent.

Married Women.—Their position has been much improved since the introduction of the Bill. An employed woman on marriage would otherwise have passed out of benefit. This would have been a real grievance, since girls joining at sixteen years of age would have had to contribute towards benefits for several years at a time when normally they would not require them, and then, on subsequent marriage, lose them; while the society in which they accumulated a transfer value (explained *infra*) would gain as much financial value as if they had lapsed. To prevent this injustice, the Act provides that so long as an insured person (female) remains in employment after marriage her position remains the same, and she continues to be entitled to all the benefits.

If she leaves her employment on marriage, she is entitled to the 'transfer value' which she has built up, after one-third has been retained, in order that, should she become a widow, she may resume her insurance and receive full benefits on going back to employment. The remaining two-thirds may be dealt with, on her behalf, in the following ways :—

1. A grant of 5s. a week during four weeks of confinement; or,

2. A weekly 5s. benefit, to run during special periods of sickness or distress, consequent on unemployment of husband or other genuine and sufficient cause.

3. She may elect to become a voluntary contributor, and the transfer value will then be available for additional benefits. Besides, since a weekly 6d. contribution would probably be beyond her means, she may continue the weekly 3d. of the employed contributor (to which the State will add 1d.), and receive benefits :—(*a*) Medical; (*b*) 5s. a week sick benefit for first thirteen weeks, and 3s. for second thirteen weeks; (*c*) Disablement benefit, 3s. a week. Special provision is also made for other contingencies.

Aliens.—These are insured, but generally do not receive the State contribution in aid nor reserve values. The sickness and disablement benefits are also lessened, in consequence of the withholding of the State contribution; the other three benefits remain the same. Owing, however, to special appeals, aliens who from poverty of means have not become naturalized, but who have resided in the country at least five years, and during that period have been members of a Friendly Society or Trade Union, are treated as though they were legally British subjects. An interesting sample of such equivalent treatment is that of the *Societa per il Progresso degli Operai Italiana* (London), which was founded in 1864 by Mazzini and Garibaldi. Other instances are Jewish societies.

Special provisions are made for soldiers and sailors, so as to provide them with insurance upon their discharge; for the mercantile marine; for employers who are accustomed to pay wages during sickness; for inmates of charitable homes. If employers have a provident society of their own, which in the way of subsidies gives benefits equal in value, they are allowed, under certain conditions, to contract themselves out of their obligations under the Act.

Reserve Values and Transfer Values.—The Act ultimately contemplates all insured persons commencing their insurance at sixteen years of age, or at such other early subsequent age at which they receive wages. But the Government actuaries estimate that there will only be some 1,200,000 compulsorily insured persons as members of approved societies between the ages of sixteen and twenty out of a total of close upon 8,600,000. We find, further, that with increasing years the number of weeks of sickness increases, for all of which a society has made itself responsible to grant benefits. We give the experience of a well-known Friendly Society (the Foresters) for the following decennial periods :—

From ages	20 to 30	8½	weeks' sickness
„ „	30 to 40	10½	„ „
„ „	40 to 50	15½	„ „
„ „	50 to 60	27¾	„ „
„ „	60 to 70	64	„ „

It is obvious that if an insured person under the Act joined an approved Friendly Society at forty years of age, and only paid in the same annual contribution (7d. or 6d. per week) as one joining at sixteen years of age, he or she would not have contributed a sufficient share to the common fund to enable that fund to pay for increasing sick claims. In other words, if it was open to a number of persons to join at forty years of age and upwards at the same rate of contribution as they could join at twenty years of age, the society, on valuation, would be found to have a rapidly diminishing solvency, or rapidly increasing deficiency, of so many shillings less than 20s. in the £. The degrees of solvency would be somewhere between 19s. and 10s. in the £—a deficiency growing yearly at compound interest. But to charge larger contributions to persons joining, say, after forty years of age would be to make the State Insurance inoperative, as the weekly contributions would be beyond their means. To avoid this want of reserves, which young members with small or no sickness from the time of joining would have built up to pay for the ever-increasing sickness of later years, the State presents the approved societies with the requisite amounts, so as to avoid the inevitable larger contributions that would otherwise have to be charged—for example, see Foresters' (Neison's Tables) sickness benefit for whole of life of 10s. per week for first six months of sickness (male, rural districts)—

Age last Birthday.	Annual Contribution.
20	10s. 5d.
25	11s. 2d.
35	13s. 10d.
40	15s. 7d.
44	17s. 4d.

Under the Insurance Act the same weekly contribution—7d., males; 6d., females (of which the insured person normally pays respectively 4d.. and 3d.)—is charged for all persons between the ages of sixteen and seventy. But to make good the loss, the State credits the approved societies for all compulsorily insured contributors (male and female) who join between the ages of seventeen and sixty-five with the sum which by rights, under actuarial calculation, such members should have built up if they had been members since the age of sixteen. In other words, it treats all these said members as if they were *now*, on joining, only sixteen years of age, instead of, for example, over a million of them being between thirty and thirty-five years of age, over half a million between fifty and fifty-five years of age, and over a quarter of a million between sixty and sixty-five years of age. The Act treats them all as sixteen years of age, and credits the difference to the approved societies. But since some 4,000,000 are *already* insured in Friendly Societies, many of them from twenty to forty and more years, and the State gives to already insured and uninsured persons (in the past) a like reserve value, the existing members of Friendly Societies previous to December 1911 should be in possession of their own old reserves and the new reserves as well. The old, in that case, will no longer be required, and will, consequently, be set free. That old reserve, however, may not have been adequate; it may fall short of sufficiency. Hence there will be a first call upon it to make good deficiencies, and enable this and that society to be actuarially solvent up to 20s. in the £, before its members will benefit individually by released reserves. The Act accordingly provides for a proper valuation of assets and liabilities; for deficiencies being made good, if found to exist; and for the old reserve to be used in giving *at once* additional benefits or reduced contributions to *all* old members of a society or to all such members only as are entitled and elect to receive benefits under the Act (s. 72). For example, approved societies will have credited to them on account of all members, *old or new* (who are now State compulsorily insured contributors), between the ages of seventeen and sixty-five, the sums shown in the tables on opposite page (samples only given).

These tables are for Great Britain. For Ireland the separate amounts somewhat differ, since the rates of contributions relating to Health Insurance are not the same, the rate in case of men being 5½d. a week (employer, 2½d.; contributor, 3d.); in the case of women, 4½d. a week (employer, 2½d.; contributor, 2d.). In both cases there is no medical benefit included.

For many years the friends of the people's mutual thrift institutions have been exercised as to the best method of giving them 'enabling aid,' in order to clear off financial weaknesses which were largely the outcome of the imperfect actuarial light of the past and its still more, from lack of knowledge, imperfect use. Little, however, was done, until from the unexpected quarter of the National Insurance Act (1911) that long-

RESERVE VALUES FOR MALE INSURED PERSONS.

Age.	£	s.	d.
17 and under 18	0	9	0
20 " " 21	1	15	0
25 " " 26	3	6	6
30 " " 31	4	13	0
40 " " 41	7	9	0
44 " " 45	8	16	0
49 " " 50	10	9	6
60 " " 61	8	2	0
64 " " 65	5	12	6

RESERVE VALUES FOR FEMALE INSURED PERSONS.

Age.	Employed Contributors (Spinsters and Widows).			Employed Contributors (Married Women).		
	£	s.	d.	£	s.	d.
17 and under 18	0	5	0	7	12	6
20 " " 21	1	0	6	6	10	6
25 " " 26	2	2	6	6	0	0
30 " " 31	3	12	0	6	6	6
40 " " 41	7	8	0	8	2	0
44 " " 45	8	19	0	9	5	0
49 " " 50	10	12	6	10	16	0
60 " " 61	9	7	6	9	8	0
64 " " 65	6	0	0	6	0	0

needed legislative assistance and financial aid has been given (see FRIENDLY SOCIETIES).

By means of these new reserves for old members, the Friendly Society system, as a whole, is enabled to start afresh with a slate clear of financial errors, and to take on a new lease of life, as well as extend the field of operation. On the day the Act came into working the Friendly Societies of the United Kingdom received, it has been calculated, a credit worth at least £10,000,000. This was not in cash down, but in amounts credited to each society or branch of society, and bearing 3 per cent. interest. The estimated aggregate of reserve values is given at the end.

The thrift side of the Trade Unions comes in for their share, as approved societies, in the same way. As to voluntary contributors in approved societies (estimated roughly, as must be the case), they will number at the commencement of the Act :—

THE UNITED KINGDOM.	
Men, about	630,000
Women, about	205,000
Total	835,000

Reserve values in their case are not given beyond the age of forty-four (and only then to persons insured before January 15, 1913), instead of, as in the case of employed contributors, to the age of sixty-four.

The vast total of reserve values is treated as a paper debt, which will be liquidated in eighteen and a quarter years by the Commissioners taking for that purpose and period the 2d., or, strictly, the $1\frac{3}{9}$d., in the case of men, and the $1\frac{1}{2}$d. in the case of women, which is respectively added to their weekly contributions by the State. The 2d. is only a rough average; in advanced years of life it will be more, in the younger years less. By this skilful piece of finance it has been possible to provide for all those persons who are now over age for entry into National Insurance, until they become qualified for a State Old Age Pension, without levying large extra taxes to meet the financial demands. Also, without loss to themselves (as at the lower years of life they will not be able to use so large a sickness benefit), the young generation will enable the older generation to partake of benefits with them, and before the young members are twenty years older in age—say, forty—will themselves, through the clearance of the loan from their combined contributions (paid by employer, employed, and State), be provided with larger benefits by way of additions, without extra payments, as follows :—

1. Medical treatment and attendance for dependants of a member.
2. The payment of the whole or any part of the cost of dental treatment.
3. An increase of sickness benefit or disablement benefit.
4. Payment of sickness benefit from the first, second, or third day after the commencement of the disease or disablement.
5. The payment of a disablement allowance to members though not totally incapable of work.
6. An increase of maternity benefit.
7. Allowances to a member during convalescence.
8. The building or leasing of premises suitable for convalescent homes and the maintenance of such homes.
9. The payment of pensions or superannuation allowances.
10. The payment of contributions to superannuation funds.
11. Payments to members who are in want or distress, including the remission of arrears whenever such arrears may have become due.
12. Payments for the personal use of a member who, by reason of being an inmate of a hospital or other institution, is not in receipt of sickness benefit or disablement benefit.
13. Payments to members not allowed to attend work on account of infection.
14. Repayment of the whole or any part of contributions thereafter payable by members of the society or any class thereof.

To those persons already (before December 1911) insured the £10,000,000 of their released funds will be also available, as has been shown, for other benefits, to be handled at once, or for reduction of contributions, after the actuarial solvency of the approved society has been, if required, provided for.

As no contribution is demanded during sickness, the payments of the normal 4d. or 3d. per week will on the average be more and more less per annum than fifty-two, as years of age increase.

Arrears are fully dealt with. For a complete exposition of such, as well as for all details in other parts of the working of the Act, the numerous official leaflets, instructions, regulations, and orders issued by the Commissioners must be consulted. Arrears are not counted during the first year of working, and generally speaking, sickness and disablement benefits are not lost, unless a contributor has been in arrears *on an average* of thirteen weeks or more within a year. This means that if, for example, a man has been insured for two years, he may be in arrears for twenty-six weeks in the second year, or if he has paid contributions for three years, he may, on the average of not more than thirteen weeks per year, be thirty-nine weeks in arrears, and still be in benefit. If he has paid his contributions for twenty years and is out of employment, he can be five years in arrears without altogether losing the above-mentioned benefits. At the same time he will be in full receipt of medical benefit, maternity benefit, and sanatorium benefit, provided his arrears have not exceeded on an average more than twenty-six weeks in each year. No arrears are counted during sickness, only when in health, but without employment. But if a man's average of arrears extends to four or more weeks within a year, sick benefit is paid on a reduced scale. When an unemployed contributor obtains employment, he is under no obligation to pay up arrears, unless he desires to get back to full benefits *at once.* In time they become extinguished, and such a contributor obtains full benefit again without having to pay either his own or the employer's arrears.

There is no need to deal specially with disablement benefit, sanatorium benefit, or maternity benefit. In the case of sanatorium, however, or hospital treatment, if the contributor has a family dependent upon him or other dependants, his sick pay goes towards their keep. Parliament has in addition provided a further sum, outside income accruing under the Insurance Act, of £1,500,000 to meet capital expenditure required for building sanatoria. Treatment for tuberculosis also means other than that in sanatoria, such as open-air treatment at home or near home. The extent of this benefit, for which there is no waiting period, is large, since one out of every eleven deaths that are registered is due to some form or other of consumption. The number in 1909 was 54,425.

Medical Benefit.—This benefit in an Act for the insurance of health should properly have been dealt with first, as being placed in the forefront of that great measure of social reform, but at the time of writing its working has not been finally settled. The medical profession, with a good deal of reason, complain that they were not consulted in the first instance, considering their services were indispensable, as to the method or methods by which they would be called upon to work the Act. In the first draft the Friendly Societies Consultative Committee recommended fixing the remuneration, to include medicine and drugs, at 4s. per head. The Chancellor of the Exchequer advanced this to 6s. per head, of which 1s. 6d. was set aside for the chemist, who, whenever possible, was to be the dispenser. This capitation grant was well above the average figure given in club practice. But it has not satisfied the doctors. Again and again the question has been debated by the profession, Whether a doctor can give adequate time and attention to his patient, while earning a living for himself, under the terms of the Act? The answer of the British Medical Association has been in a decided negative, with the formulating of 'the following cardinal points' as an irreducible minimum:—

1. *An income limit of £2 a week for those entitled to medical benefit.*

This wage limit would be to cut away the breadth of the health insurance side of the Act. The free doctor, who should keep the community of from 13,000,000 to over 20,000,000 in health, stands in the forefront of the scheme. A wage limit (desired by the doctors) is already fixed by the scheme—an income not exceeding £160 a year, or, say, £3 a week, except in the case of manual workers. The medical profession would lower it to £2 a week. The question is one for the Insurance Committees, as the local authorities of the Act. If the medical benefit is put so low as to exclude insured contributors who take sick benefits, the purpose of the Act will be contracted, and there will be serious loss in the breadth of its efficiency to the wealth producers of the State. Under present conditions many persons do not dare to call in the doctor, except compelled under pressure of a manifestly dangerous disease to do so.

2. *Free choice of doctor by patient, subject to consent of doctor to accept patient.*

This is generally agreed upon; the only question is how best to secure this freedom on both sides.

3. *Freedom of Friendly Society control.*—The doctors have proved the old system of club practice at so much per head to be pernicious. It resolves itself in too many cases into a mere pill, plaster, and bottle treatment of persons already diseased or supposed to be diseased. No adequate time can be given for diagnosis at the old club practice capitation fee. Cases have to be made 'book cases,' and not individual cases thought out by the doctor with this or that important shade (if no more) of difference. The Insurance Act already does much to kill the old, out-of-date method of club practice. The medical benefit is no longer in the hands of the Friendly Societies, but in those of the Insurance Com-

mittees, county or borough. The doctors, however, so far as they are concerned, object to a majority of insured persons serving on these committees, and claim to manage and administer the medical benefit themselves under their own conditions, and in consultation with their own committees; hence they demand:—

4. *Adequate representation on Insurance Committees, as well as standing committees of their own.*

5. *Adequate Remuneration.*—It is here that calculations differ widely. In a given instance, a Friendly Society's man of forty-three years of age, whose sickness in vital statistics works out in an average of eleven days in the year, would require not less than six visits to his home. 'Six visits for 4s. 6d. equal 9d. a visit.' Or, on another calculation, 'each patient must receive six visits at his home and twelve consultations at the doctor's home every year. Eighteen attendances for 4s. 6d. equal 3d. per attendance.'* The doctors are accustomed to put patients in both cases, *instead of insured contributors* in the one case and patients in the other. The number of medical practitioners who could deal with this practice is at the most 25,000, and the number of persons they would receive a capitation grant from every year would be from 13,000,000 to, shortly, 20,000,000.

In answer to the prolonged objections of the medical profession, as voiced by the British Medical Association, to the inadequacy of the original capitation grant of 6s.—1s. 6d. of which would go to the chemists, as providers and dispensers of medicines and drugs—the Chancellor of the Exchequer, after consultation with the Advisory Committee (see *infra*), has stated the final proposals of the Government, as follows:—

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* *Can the Doctors Work the Insurance Act?* By E. Ward Lowry.

Per Insured Person.

	s.	d.
Ordinary medical treatment and attendance, with certain extras	6	6
Home tuberculosis treatment	0	6
A reserve between doctor and chemist	0	6
Medicines and drugs	1	6
Total	9	0

The ordinary allowance set aside for drugs is 1s. 6d., which will pay the chemist, or the doctor, if he dispenses. But the 6d. reserve, yielding £320,000, will be added to the payment for drugs, in cases where the normal amount proves insufficient; otherwise it will be available for the doctor. In cases, however, of epidemics, the extra drugs will be provided out of a special central fund. The doctor, with extra work to do, will not be deprived of the additional 6d. per insured person. Such extras as the necessary medical certificates, mileage, etc., are included in the 6s. 6d. In ordinary cases the revised proposals mean 7s. 6d. per insured person for the doctors, whose demands were for 8s. 6d. Besides the granting of certificates, the Chancellor, in his speech to the Advisory Committee, asked for simple records of cases to be kept, and, above all, for an improved medical service to that of the old Friendly Societies' contract club practice, including resort, where essential, to 'modern means of exact diagnosis.' The panel system is still to be retained. The new arrangements are also in the nature of an experiment, to hold good, if accepted, for three years only. The only other alternative would be that of a national medical service—a method of procedure which has received a large amount of public support. There are indications that the medical profession will work these latest proposals of the Government. The extra money required will be voted by Parliament, and not come out of the income arising from the Act.

Judging from Friendly Society returns, and allowing for inferior lives, the average number of *patients* out of 13,000,000 in one year would be only 30 per cent. Given five hundred insured *contributors* on his register, a doctor would, on an average, have to visit one hundred and fifty *patients* in a twelvemonth for £250.

Deposit Contributors.—The difficult question of how to deal with 'bad lives' is temporary in character, lasting only until the results of the first valuation in three years' time are available. It has been calculated that some 882,000 persons will be deposit contributors; but since the Collecting Societies and the Industrial Life Assurance Companies, especially the *Prudential*, have entered the harvest fields, it is probable that this estimate will at least be halved, since the above bodies would take into their separate sections of approved societies many lives which Friendly Societies and Trade Unions would decline to receive. Besides, the approved Friendly Societies and Trade Unions themselves, having relaxed the old qualification of a medical certificate for candidates, will open their doors the wider. The deposit system partakes of the Savings Bank individualistic methods of thrift insurance rather than of the collective and mutual methods of the Friendly Society. The contributions of these insurers and those of their employers are paid into a Post Office fund, and the State adds two-ninths in the case of men and one-quarter in the case of women to the sum that is drawn upon. As soon as these individual deposits are respectively exhausted, the insurers are run out of benefit. Medical and sanatorium benefits continue to the end of the current year, and so much longer as the Insurance Committees determine. The one advantage, in the midst of the number of disadvantages, is that if a depositor dies, the sum standing in his name, which represents his own contributions, is paid over to his representative; but the employer's share is divided among the other deposit contributors.

This section in the Act becomes inoperative on January 1, 1915. The deficiencies of this section are perhaps more manifest in the case of women.

'Suppose that you have been in full work for the first year after the Act comes into operation, so that fifty-two contributions (26s.) have been paid. Then you will be entitled to benefits to the value of 34s. 8d. Before you can draw any sickness benefit in any year 11s. 3d. will be taken from this sum to pay for—

'(1.) Your doctor and medicines in case you get ill.

'(2.) Special treatment in case you get consumption.

'(3.) Expenses of management.

'This leaves 23s. 5d., which is a few pence over *three weeks*' sick pay at 7s. 6d. a week.

'Now suppose you had joined an *approved society*, you would get, in addition to your doctor and medicines when you are ill, 7s. 6d. a week for *six months*, if necessary. If at the end of that time you were still incapable of work, you would get 5s. a week, provided that you had paid in regularly for two years, and this would continue to be paid to you while that incapacity lasted.

'If you are a *deposit contributor* and have drawn all your money out in three weeks' sick pay, there will be nothing left for maternity benefit in case of confinement, and you cannot have a free doctor to attend to you then, because that is not included in medical benefit. If, however, you are a wage-earning member of an *approved society* and a married woman, you will get sick pay during confinements, as well as the maternity benefit of 30s.'—Leaflet issued by National Union of Women Workers.

No additional benefits, as with members of approved societies, are obtainable. The idea is that this section of the Act is only intended mainly for wastrels, and must not be made so attractive as to prevent the compulsorily insured being at the pains to join an approved society and obtain full benefits. The medical benefit in this deposit system, so far as the doctors are concerned, can only be fairly paid for on an attendance fee.

Administration.—The centres of administration are four separate bodies of Commissioners (originally only one for the United Kingdom):—

England.—Sir Robert Morant, K.C.B., Chairman; Mr. J. Smith Whittaker (doctors' representative), Vice-Chairman; Mr. J. S. Bradbury, C.B.; Mr. T. Neill; Mr. D. J. Shackleton (late Labour representative); Mr. J. Lister Stead (Friendly Societies' representative); Miss Mona Wilson (Working Women's representative); Mr. Claud Schuster, Secretary.

Scotland.—Mr. J. Leishman, Chairman; Dr. J. C. M'Vail (doctors' representative), Vice-Chairman; Mr. J. M'Nicol (Friendly Societies' representative); Miss M. M. Paterson; Mr. Jefferys, Secretary.

Ireland.—Mr. J. A. Glynn, Chairman; Mr. W. S. Kinnear; Mrs. Dickie; Dr. W. J. Macguire; Mr. T. Houlihan, Secretary.

Wales.—Mr. T. J. Hughes (Friendly Societies' representative), Chairman; Dr. H. Meredith Richards (doctors' representative), Vice-Chairman; The Hon. Violet Douglas Pennant; Mr. J. Rowland, M.V.O.; Mr. J. Evans, Secretary.

Joint Committee of Commissioners.—Mr. C. F. G. Masterman, M.P., Chairman; Sir Robert L. Morant, K.C.B., Vice-Chairman; Mr. J. S. Bradbury, C.B.; Mrs. Creighton; Mr. J. A. Glynn; Mr. T. J. Hughes; Mr. J. Leishman; Sir John Struthers, K.C.B.; Mr. J. Smith Whittaker; Mr. W. J. Braithwaite, Secretary.

This Central Committee is for the purpose of equalizations, valuations, adjustments, transfers, etc. The Chief Registrar of Friendly Societies, Mr. G. S. Robertson, is an official member of all the Commissions and of the Committee. Mr. A. W. Watson, F.I.A., is the Chief

Actuary to the Joint Committee, and Actuarial Adviser to the Chief Registrar of Friendly Societies. Mr. Watson was formerly Actuary of the Manchester Unity.

There is also an Advisory Committee appointed, consisting of 159 persons, representing the various interests concerned. The expenses of the Commissions are paid by moneys provided from time to time by Parliament.

Insurance Committees form the local authorities in every county and county borough, with a maximum number of eighty members to a minimum of forty. It is not possible to even summarize their duties, which extend to some fifty heads. Their composition is a fivefold mixture; but three-fifths are to represent members of approved societies and deposit contributors in proportion of their respective numbers. Counties are further to be divided up into District Insurance Committees, so as to come into real contact with local working. Among other duties, an Insurance Committee administers the medical benefit and controls the sanatorium benefit. The misfortune has been that they have been brought so late into existence, owing to the difficulty of knowing what the proportion of insured persons within the area of administration would be, that up to the time of writing their composition has been only provisional. Consequently, while some have done a little towards making the working of the Act better known, others have marked time, and been careful not to take action, except talking behind closed doors, and pleading their ignorance of the Act they are to assist in putting into action. It seems fair to assume that, unless members are given their travelling expenses, it will not be possible to compose committees which are adequately representative of smaller as well as larger numerical interests.

Approved Societies.—At the first the Insurance Bill only contemplated (outside the deposit system) the use of the existing mutual thrift institutions of the industrial classes or of new kindred societies formed for that purpose. Hence the two main qualifications were — (1) The society must not be carried on for profit; (2) it must be under democratic management. These qualifications were fulfilled by Friendly Societies and Trade Unions, but not by Collecting Societies and Life Assurance Companies, since these latter were controlled and managed by the shareholders and directors for profit, while the companies were composed of policy-holders and not members. These were, however, allowed to take part in the working of the Act by means of 'separate sections' attached to them, but outside their own businesses. These 'separate sections' have, as a rule, only complied in a perfunctory manner with the two essential qualifications before stated. The democratic element of officers and committees of management elected by the members will be difficult in this case to carry out in the working. In this way Deposit Societies, Holloway Societies, Industrial and Co-operative Societies have become approved. The largest company which is working the Act is the *Industrial Prudential*, which has no less than half a dozen distinctly separate sections, so as to cover the whole area of the country.

As regards a minimum number of members, this originally stood at 10,000, a limit which would have allowed just over two dozen Friendly Societies and a few Trade Unions to reap the whole harvest fields, and at the same time have kept outside *all* the Friendly Societies of Scotland. No numerical limit at present prevents a small society from becoming 'approved;' but the Commissioners generally ask for evidence of at least fifty who will be State insured persons.

The lack of numbers in small societies which tended to militate against the free play of the financial law of averages, has been overcome by financial pooling arrangements. A number of societies with less than 5,000 members are, in one way or another, allowed to associate themselves together for the purpose of valuation, or are so associated by the Insurance Committees. Societies in the pool which show an actuarial surplus remit one-third of the same to the association for general use. Out of this pool the societies which show an actuarial deficiency are assisted to make it good, provided they have worked the Act with due care. Any one-third surplus or portion of surplus not required is returned to its respective owner.

In the matter of approval, specimen copies of model rules and requisite regulations are supplied and societies assisted in every possible way by the Commissioners. A word of acknowledgment is due to them after several months of increasing pressure. Doubtless the old Friendly Societies' officials among them, as well as the Labour representatives, gave a helping hand; while in Mr. Secretary Braithwaite the Joint Committee of Commissioners had available a knowledge of mutual thrift and finance obtained from early life in practical apprenticeship. Further, the Joint Committee had at hand the extensive acquaintance with, and thorough mastery of, the working of vital statistics, as applied to Friendly Society finance, possessed by Mr. A. W. Watson, a member of the actuarial firm of Messrs. Reuben Watson and Sons. So much ignorance was abroad among other than the large societies that infinite pains and great forbearance at headquarters were needed. It is a pleasing duty to be able to record that these co-ordinate factors in the working seemed never to be lacking. At the same time, the new Chief Registrar of Friendly Societies, Mr. G. Stuart Robertson, whose duty it is to pass all financial schemes under s. 72 of the Act, has risen to the great occasion, and very few documents of the kind will compare in ability and lucidity with the Chief Registrar's *Sugges-*

tions for such schemes; while the issue of a 'Table for a Provisional Scheme' for temporary use saved a trying situation. We wish as much praise could be given the many actuaries who have had to act as friendly skilled advisers in framing permanent schemes which will release existing reserves. Some of these appear to have advised the smaller Friendly Societies not to work the Act themselves, but to set up, as if they had been associations worked for a profit, 'separate sections' outside the society. Such a line appears going beyond the spirit of the Act, since a 'separate section,' as has been shown, was only intended for such bodies as could not themselves comply with requirements. It was the purpose of the Act to use the existing Friendly Society machinery, and to strengthen and extend its operations to national needs. The Chief Registrar, in his *Suggestions* addressed to Friendly Societies, does not so much as mention a 'separate section.' Injury is done the voluntary thrift movement when it is purposely advised not to avail itself of an opportunity which cannot again occur. It has, further, been injudicious treatment for some of these skilled advisers to take upon themselves the whole business of getting societies 'approved,' down to the very printing of the rules, and the 'approval' itself. This looks like an excess of their powers; and at the same time it leaves the members in ignorance, instead of educating them. A number of smaller societies have had 'approved sections' thrust upon them without being aware that it was not the road along which they were intended to travel. It is to be feared that their future is imperilled.

For the purpose of a thorough system of inspection and audit, England has been divided into nine districts. The auditors have been found willing to give their skilled assistance to any secretaries of approved societies who may be in difficulties and desire their aid. This has led in many districts to smoother initial working in quarters where so much is strange in the 'new order.'

The Employers' Contribution.—The Chambers of Commerce and some large business establishments, while seeing in the Act benefits to the workmen and workwomen, are of opinion that it will injuriously affect trade and business, and force manufacturers to raise prices in order to recoup themselves. A closer examination of the results of the working from an employer's point of view should modify this opinion, as a similar one has already been modified in Germany. There the masters, who have a larger share to pay, find the insurance of their workpeople well worth the expenditure, though that amounts to one-third of the premiums and half the premiums for old age pensions. The workpeople are kept in better health, and more and better work is done. As to the 3d. of the employer in this country, it will prove a good investment on his part, and will come back to him with interest in its circulation. When the Act is in full operation no less than £20,000,000 will be distributed in one year in payments to insured persons—that is, that sum will be put into circulation for purchasing purposes. When members of the up till now uninsured 10,000,000 were not at work through sickness, they had to give over buying this and that at the shops and in the markets, and content themselves with the variable pittance of charity or Poor Law relief. The retail tradesman ceased to receive his money; had to give credit or to let his customer (or the Poor Law officials for him) have a portion of the money the same tradesman had paid to the rates; and so he, the tradesman, paid the customer to buy his goods, instead of the customer paying him. *Every uninsured sick person means a full consumer or family of consumers less in the market;* less business, with less profit, for the baker, the grocer, the

THE AGGREGATE CONTRIBUTIONS TO BE RECEIVED FROM EMPLOYERS AND INSURED PERSONS—*i.e.* MEMBERS OF APPROVED SOCIETIES—IN THE UNDERMENTIONED YEARS.

United Kingdom.

Year.	Compulsory.			Voluntary.			Total, Both Classes.
	Men.	Women.	Both Sexes.	Men.	Women.	Both Sexes.	
	£	£	£	£	£	£	£
1912–13	9,002,000	3,252,000	12,254,000	781,000	229,600	1,010,600	13,264,600
1913–14	12,266,000	4,427,000	16,693,000	1,033,000	303,400	1,336,400	18,029,400
1914–15	12,529,000	4,518,000	17,047,000	1,025,000	301,100	1,326,100	18,373,100
1915–16	12,795,000	4,607,000	17,402,000	1,016,000	298,900	1,314,900	18,716,900
1916–17	13,060,000	4,695,000	17,755,000	1,005,000	296,500	1,301,500	19,056,500
1917–18	13,307,000	4,781,000	18,088,000	993,000	294,600	1,287,600	19,375,600
1922–23	14,421,000	5,172,000	19,593,000	893,000	269,300	1,162,300	20,755,300
1927–28	15,501,000	5,558,000	21,059,000	801,000	246,400	1,047,400	22,106,400
1932–33	16,551,000	5,940,000	22,491,000	703,000	232,100	935,100	23,426,100

Annual Expenditure for Maximum Benefits and Cost of Administration.

United Kingdom.

Year.	Men.		Women.		Total.
	Compulsory.	Voluntary.	Compulsory.	Voluntary.	
	£	£	£	£	£
1912–13	3,690,000	247,000	1,393,000	76,000	5,406,000
1913–14	10,526,000	726,500	3,639,000	196,600	15,088,100
1914–15	11,981,000	847,100	4,076,000	226,400	17,130,500
1915–16	12,782,000	890,800	4,319,000	239,800	18,231,600
1916–17	13,198,000	903,300	4,434,000	243,700	18,779,000
1917–18	13,648,000	909,600	4,554,000	247,500	19,359,100
1922–23	15,444,000	930,200	5,052,000	257,500	21,683,700
1927–28	16,785,000	945,800	5,515,000	264,400	23,510,200
1932–33	18,118,000	953,800	5,981,000	274,100	25,326,900

Estimated Aggregate Initial Reserve Values.

	Men.	Women.	Both Sexes.
	£	£	£
England	36,700,000	13,678,900	50,378,900
Wales	2,301,000	780,200	3,081,200
Scotland	5,217,000	1,877,200	7,094,200
Ireland	3,288,000	1,594,600	4,882,600
	47,506,000	17,930,900	65,436,900
Navy and Army . .	1,206,000	—	1,206,000
Totals . .	48,712,000	17,930,900	66,642,900

butcher, the shoemaker, etc. The good custom of 10,000,000 is no longer lost; not only is the wolf kept from the door of the customer, but with the weekly 10s. or 7s. 6d. in hand *trade goes steadily on without a*

ESTIMATE OF THE TOTAL NUMBER OF PERSONS ABOVE THE AGE OF SIXTEEN WHO WILL COME WITHIN PART I. OF THE SCHEME.

	Members of Approved Societies.		Deposit Contributors.	Total.
	Compulsory.	Voluntary.		
Men	8,579,000	625,000	638,000	9,842,000
Women— Spinsters and Widows . .	3,080,000	204,000	191,000	3,475,000
Married. . .	548,000	—	53,000	601,000
Total Women .	3,628,000	204,000	244,000	4,076,000
Both Sexes . .	12,207,000	829,000	882,000	13,918,000

break, and all trades, directly or indirectly, are benefited, and unemployment is lessened with those threepenny pieces of the employer.

It was estimated that there would be 12,080,000 stamps affixed to the insurance cards per week. The latest information gives an average of 12,400,000 for the first eleven weeks of operation of the Act, and 15,250,000 for the twelfth week—the last but one of the first quarter. The exact number of insured persons cannot yet be ascertained, but the number is well over 12,000,000, and it is still rising, as cards are handed in at the close of the first quarter's working.

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Insurance, Unemployment. See UNEMPLOYMENT.

Interest. See CAPITAL.

Inventions. See INDUSTRIALISM, HISTORY OF.

Joint Wages Boards. See METHODS OF INDUSTRIAL PEACE.

Kartells. See COMBINATIONS, INDUSTRIAL.

LABOUR, HISTORY AND THEORY OF.

History. | *Theories.*
Bibliography.

History.—The chief characteristic that distinguishes the economic position of the working classes to-day from that of former ages is the fact that employment is based upon short-period contracts, which are freely made and terminated according to the ever-changing needs of business. Very few occupations carry any guarantee of permanent employment for wage-earners. The duration of the wage contract is commonly a day, a week, or a month, according to circumstances; while its terms (wages, hours, and conditions of service) are continually varying with the fluctuations of the market. This uncertainty of status, which is the cause of all the chief difficulties of the present 'labour problem,' is a feature peculiar to modern times, and arises from the new economic organization that dates from the Industrial Revolution.

In the civilizations of the past manual labour was usually performed by slaves, who had no recognized political or economic status. In such societies the only 'labour problems' were those of discipline and the protection of the ruling classes against revolt, though the welfare of the slave was to some extent safeguarded by the kind of considerations which induce a man to look well after his horses or his cattle. In primitive communities, on the other hand, the whole tribe or village, as a rule, stood on an economic equality; and so long as there was no private ownership of land the products of labour would be shared by all alike, in good years and in bad. In feudal Europe we find a third type of economic organization, in which elements both of the communal and of the slave state may be traced; for while the individual was not the complete personal slave of his overlord, he yet had to render him certain dues and services in return for certain specific rights. The nature of these mutual obligations varied very much from place to place; but the essential feature of every type of feudalism was that the relation between the cultivator and his overlord was based upon the rendering of customary services. Agricultural England, for example, was organized on the manorial system, in which the villein had to work for a certain time on the lands assigned to the lord of the manor; but having done so, he was secure in the enjoyment of his share in the produce of the common fields of the village. He was, however, attached to the manor, and could only change his status by escaping to a town, or by emancipation by his lord. In either case he commonly lost his rights in the land. Life in the towns was—at first at any rate—less restricted than in the country; but here, too, we find tradition and heredity determining each man's career, and prior to the Black Death there can have been very little opportunity for changing one's occupations or of moving from town to town.

The great transition, as has been said, from feudalism to modern conditions occurred in the eighteenth century at the industrial revolution; but even in mediæval times the process of economic evolution was continuous, and in particular two important periods of change can be distinguished—namely, the last half of the fourteenth and sixteenth centuries respectively. The Black Death of 1349 reduced the population so enormously—it is said by more than one-half—that old relationships were seriously disturbed. Estates were left in some cases without heirs, in others without cultivators. Men found that by leaving their homes they were able to earn good wages instead of obtaining a living in return for services; others, while retaining their land, found that they could commute their services for a money payment; and thus we hear for the first time of rent in its modern sense and of labourers working for wages. Various Statutes of Labourers attempted to reimpose the old order of things; and though the Peasants' Revolt was at the moment unsuccessful in resisting this reaction, the Black Death definitely marks a new era in economic relationships. Knowledge of what was going on in different parts of the country was at this time diffused by the advent of the wandering friars, who served to make economic changes, and in particular the process of emancipation, more general and less local than they otherwise would have been. The two centuries following the Black Death saw a great extension of sheep-farming in England, which was largely due, in the first instance, to the scarcity of labour.

In the second period far-reaching economic changes were caused by the new silver which poured into Europe after the discovery of America. The rise of prices which followed, combined with some other causes—among which may be mentioned the disbanding of retainers after the Wars of the Roses, the dissolution of the monasteries by Henry VIII. in 1536 and 1539, debasement of the coinage by various monarchs, and the continued enclosure of common and agricultural land for sheep-raising once more disturbed economic relations, set adrift a large number of men who wandered the country in search of a livelihood, and even in the case of those who retained their employment caused poverty and distress, since wages did not move upward with the rise of prices. At first it was attempted to meet these difficulties by repressive measures, but subsequently, in Elizabeth's reign, Acts were passed which, while making provision for those unable to obtain employment, attempted to prevent the migration of labour, to bind a craftsman to his trade, and keep out all who had not passed through the ordinary apprenticeship (seven years in most cases), and to place the determination of wages in the hands of Justices of the Peace. The chief of these measures were the Statute of Artificers of 1561 and the Poor Law Act of 1601, the object of these Acts being to maintain as far as possible the *status quo*, and to allay the unsettlement of the population. Such a policy, though it might have partial success at the time, could not permanently keep back the course of economic development.

During the next two centuries various influences were at work which tended to break down the restrictions on the free movement of labour. Capital was beginning to accumulate through the growing mercantile activity of the country and our Colonial expansion, while the requirements of foreign trade began to break down the local economic independence of various districts. Conservative tradition, however, induced the Government to put every possible barrier in the way of these developments. The Law of Settlement of 1661, under which a man might be forcibly sent back to his birthplace lest he should become a charge on the parish to which he moved, was severely enforced, while the monopolistic powers of various corporations were left unchecked. In a few notable cases immigrants from abroad were able to establish themselves here; and free towns, such as Manchester, which admitted the newcomers, profited greatly thereby. But, on the whole, at the beginning of the eighteenth century legislative and customary restrictions limited the economic freedom both of employers and of employees in a manner that was quite incompatible with the new economic influences that were about to come into play. It was under such circumstances that Adam Smith wrote the epoch-making work which gave an entirely new colour to public opinion on economic matters, and reversed the former policy of maintaining traditional economic relations in favour of the policy of *laissez-faire.* Each individual is the best guardian of his own interest; and if all artificial restrictions are removed, men will turn to those occupations which best suit their convenience and their pocket. The free flow of the nation's energies into those channels where high profits and high wages indicate that the need is greatest is the surest way of adding to the wealth of the nation. This argument, enforced by the self-interest of the commercial classes, who at the time were obtaining an increasing control of government, produced the change of policy referred to.

In the case of agriculture the economic revolution took the form of new methods of production—the rotation of crops, the use of drills, scientific breeding, etc. But though these changes added enormously to the productive power of the countryside, they involved the enclosure of common fields, the curtailment of those common rights which had survived previous enclosure movements, large-scale farming, and a cleavage between social classes in agricultural districts. The yeoman farmer (the descendant of the emancipated villein of the fourteenth century) disappeared, and his place was finally taken by the agricultural labourer working for weekly wages. The corresponding changes in manufacturing industries are associated with the introduction of machinery and the use of power, which involved large-scale production in factories, the disappearance of handicrafts in many industries, and the supplanting of skilled labour by monotonous machine work, much of which was done by women and children. (See INDUSTRIALISM, HISTORY OF.) Manufacture on a large scale involved uncertainty and trade fluctuations, for no employer was certain of his market; while the great social upheaval that accompanied the industrial revolution produced such a rapid increase both of the urban and agricultural population, through early and improvident marriages, that the labour market was overstocked. The difficulties of the period of transition were aggravated by the heavy drain of the Napoleonic wars; by an injudicious system of charity, under which grants in aid of wages were given freely (which acted as a bounty on the employer who paid low wages, and so pauperized a large part of the population); by a severe Corn Law, which attempted to limit our food supplies to our own resources; and by the prohibition of combinations of working-men to obtain better conditions of service, because, it was argued, such agreements were an infringement of natural liberty, and were a check to economic development. Attempts were made to revive the determination of wages by Justices of the Peace and the apprenticeship regulations of the Act of Elizabeth; but these efforts to return to an obsolete policy were finally abandoned with the repeal of the Apprenticeship Laws in 1813.

Thus, although the industrial revolution was succeeded by a manifold increase in the nation's capacity for producing material wealth, the condition of the working classes deteriorated, until it reached its lowest ebb in the 'forties of the nineteenth century. The obvious difficulties of the time made it necessary to modify the policy of complete *laissez-faire* in regard to labour—a change of attitude which was hastened by the increasing facility of communication among the working classes themselves, in which process the Penny Post and the Press played an important part. The repeal of the Anti-Combination Laws in 1825, the new Poor Law of 1834, the Factories and Mines Acts of the 'forties, the repeal of the Corn Laws in 1846, and of the Navigation Laws in 1849, the establishment of a central body controlling public health and sanitation in 1849, and various other changes of this period combined to alleviate the worst evils of the situation, and to place the worker in a position in which he was able to benefit by the further enormous increase of material wealth which began in the middle of the century. Since 1850 the slowing up in the rate of increase of the population and the organization of employees in the staple industries of the country into Trade Unions have prevented the glut of the labour market in all but the lowest type of labour, and have permitted an increase of wages to take place at a time when prices, for the most part, have been falling. The fluctuations of industry and the uncertainty of employment still remain; while the evils of overcrowding, which were produced by the rapid concentration of population into large towns, have not yet been completely met; but the standard of living rose very rapidly until the end of the century, political power has been attained by the masses, and means of information, of travel, and of amusement brought within the reach of the wage-earning classes. In the last fifteen years the process of improvement has been checked by an upward movement of food prices, while the difficulty of obtaining a corresponding increase of money wages has not been diminished. The tendency to link together businesses on a national scale has involved bargaining between national combinations of labour and of capital; and in recent years failure to arrive at agreement has produced a series of disastrous strikes, which have forcibly drawn attention to the question whether the Government should not make itself responsible, in some degree at all events, for the determination of wages and conditions of labour.

Theories.—During the one hundred and fifty years of economic revolution theories about labour have been modified as circumstances have changed, the points emphasized to-day being very different from those which Adam Smith thought important. In certain respects the doctrine of *The Wealth of Nations* with regard to labour was borrowed from the Physiocrats. In the eighteenth century the land of France was being drained by tax-gatherers, wealth was being accumulated in Paris, and the energies of the nation destroyed through constant war. Hence Turgot and his friends evolved the 'Agricultural Theory' of economics, which taught that all wealth is created by agriculture; that persons engaged in commercial and industrial occupations transform but do not produce wealth; and that therefore the first efforts of the Government should be devoted to developing a healthy agriculture—a policy badly needed by France at that time. As to distribution, the 'économistes' assumed that the wages of labour always tend downwards to the point at which they are just sufficient to maintain the supply of labour. If wages rose above this point, the population would increase, or prices rise through the competition for commodities. This theory of wages was stated as a natural law. It is, of course, not an inevitable rule; but was, in fact, true of France at that time.

Adam Smith, covering a much broader ground than the Physiocrats, showed that industry and commerce are means of producing wealth just as much as is agriculture; that the effectiveness of labour is greatly increased by specialization, by use of machinery, etc.; that the accumulation of capital is essential for carrying out these principles, and that the removal of restrictions on trade, on labour, and on the use of capital is the surest way of increasing wealth. As to the share of the product which labour can obtain, Adam Smith followed the Physiocrats in assuming that wages tend, in the long run, to be just sufficient to maintain the labourer and his family. He, however, saw that the demand for labour may often raise wages above this level, and laid down the proposition that wages will tend to rise above subsistence level so long as capital is increasing faster than population; for it is accumulated capital which creates the demand for labour, since capital cannot be usefully employed without labour; thus the rise of wages is made to depend on the increase of capital. Ricardo took the same line, but qualified his statement of what subsistence level is by the remark that the natural level of wages depends on 'the customs and habits of the people'—that is to say, it depends on the standard of living—a statement which evades the difficulty of considering what economic or social influences are able to bring about a rise in the standard of living. Malthus's *Essay on Population* is an attempt to discover from history the relation between population and the means of subsistence. His researches showed that, while the latter have natural limitations, there is always a tendency for numbers to increase more rapidly than man's control over Nature. In the later editions of his work, it is true, he recognized that the population may be deliberately restricted, so that the standard of living may rise; but his survey of history did not show that this often in practice occurred; and events in contemporary England, where population was being artificially stimulated by the Poor Law and other influences, would certainly not suggest any other conclusion as regards his own country. History, therefore, seemed to indicate that the assumption of Adam Smith and the Physiocrats was justified.

The general tone of the classical economists was thus a pessimistic one for the working classes; and the conclusion drawn by Karl Marx and the Socialists—that under competitive conditions there is an iron law which lowers wages to the cost of production of labour—was a natural one. The theory of Karl Marx, indeed, arises from a synthesis of this idea, with the fact that wealth was increasing at an enormously rapid rate. Marx, moreover, clearly saw that the individual worker was in a hopelessly inferior position when bargaining with a large employer of labour, and was therefore compelled to accept a subsistence wage rather than be unemployed, whatever the value of his work might be. Adam Smith thought that competition between the various owners of capital would raise wages, but Marx assumed that capitalists would always wait and compel the labourer to accept the minimum rate of wages. To complete the Marxian scheme, it was only necessary to add the philosophical theory found in the writings of the early English Socialists and Proudhon that value is created by labour alone, and that therefore the labourer has a right to the whole produce of his labour. The capitalist wages system, in which the worker is divorced from the control of the means of production, thus presented itself as a device for alienating from the real producer of wealth everything but the bare means of subsistence. This theory, though having considerable vogue on the Continent, did not take root in England at all in its crude form, and has only in recent years been found, even in a modified form, in the writings of English Socialists.

Meanwhile the attention of the English working classes was directed during the early part of the nineteenth century to perfecting the Trade Union movement, which enabled the worker to bargain on more equal terms with his employer on the one hand, and the Co-operative movement, a device for supplying the necessaries of life in an economical manner for groups of working-class people, on the other. In both these movements the name of Robert Owen is conspicuous; but the influence of that remarkable man diminished considerably in his later years, when he turned his attention to the foundation of communist settlements.

By the middle of the nineteenth century economic theory in England had undergone a change. The view of Adam Smith, that capital is the source of the demand for labour, and that when capital is increasing wages will rise, had developed into the Wages Fund theory, which in its crude form asserts that a certain amount of capital is set aside as a fund from which wages will be paid. This fund, it was said, could not be controlled by any action on the part of wage-earners; and if, therefore, one group of wage-earners obtained higher wages, it could only be done by lowering the wages obtained by some other group; hence Trade Union action could not do any good in the long run to the working classes as a whole. The Wages Fund theory, however, was killed by the logic of events even before it was recognized that the capital which is used for the payment of wages is not predetermined in amount, but depends on the *anticipated productivity* of labour.

Modern diagnosis of economic conditions recognizes, first, that the view that the whole produce is attributable to labour in a narrow sense is untenable, for it is evident that the extent to which labour is assisted by capital—the result of previous saving—determines the amount of product quite irrespective of the skill displayed. Manual labour, moreover, in contrast to mental activity, plays a rapidly diminishing part in almost all stages of production. Secondly, that the level of wages depends to a very great extent upon the productive efficiency of the labourer, and though wages may for a moment be kept low by the fact that there may not be sufficient floating capital out of which wages may be advanced or because of some hitch in the complicated mechanism of production and the distribution of produce, yet means will ultimately be found for advancing to labour approximately what it is worth when working in conjunction with capital. Thirdly, that this optimistic result will only be brought about provided there is real competition among employers for labour—a condition which is by no means always realized at the present day, when monopolies exist in so many forms and in so many parts of the economic world. Trade Unions are therefore increasingly necessary in helping to arrive at this normal wage, unless some external influence, such as the State, intervenes to enforce collective bargaining.

Bibliography.—For an account of life on the English manor, see Maitland's *The English Manor;* Vinagradoff's *Manorial System;* also *The Enforcement of Statutes of Labourers* (Columbia University Studies in History, Economics, and Public Law).

For a contemporary account of labour conditions under the Tudors, see Part I. of More's *Utopia.* Unwin's *Industrial Organization in the Sixteenth and Seventeenth Centuries* deals with industrial conditions under the Tudors and Stuarts. For a description of rural conditions at the time of the industrial revolution, see Hammond's *Village Labourer*, 1760–1832. See also Toynbee's *Industrial Revolution of the XVIIIth Century in England.*

Engel's *Condition of the Working Classes in 1844* gives a picture of labour conditions at their worst. For a detailed account of wages, etc., during the whole period, see Thorold Rogers's *Six Centuries of Work and Wages.* The chapters in Karl Marx's *Kapital* on English economic development cover the same ground in a more cursory manner; but Marx's reading of history is much more favourable to early times in comparison with modern conditions than that of other historians.

A summary of various labour theories is given in Gide's *Principles of Political Economy;* while a more detailed discussion of the views of various economic writers on the relation between wages and capital may be found in Taussig's *Wages and Capital.* Hyndman's *Economics of Socialism* contains an exposition of Marxianism; while the best exposition of ideas current among English economists may be found in Marshall's *Principles of Economics.* A somewhat different view, which attaches more importance to the monopolistic character of modern business, is given in Hobson's *Industrial System.* W. T. L.

LABOUR AND POLITICS.

1. *The Co-operative Movement.*
2. *Socialism.*
3. *Communism.*
4. *Anarchism.*
5. *Syndicalism.*
6. *Bibliography.*

In all countries where there is a political Labour movement that movement is identified with theories and proposals for the reconstruction of industry and society on Collectivist or Co-operative lines. These theories and proposals differ very much in degree and in detail, but there is one principle and object which is common to them all. Labour Parties, Co-operative Societies, Socialists, Anarchists, Communists, and Syndicalists all aim at the substitution of private ownership of industrial capital by collective ownership. There is between the parties mentioned the widest possible difference of opinion as to the way in which the result has to be attained, and as to the form of organization and government under Collectivism. Some Co-operators and all Anarchists look to the attainment of the object by the efforts of free voluntary association. Communism and Syndicalism, so far as these movements have been reduced to definite theories, also repudiate political action, and look upon the State with suspicion, if not with actual hostility.

1. **The Co-operative Movement.**—The modern Co-operative movement in Great Britain is not political. On the continent of Europe it is, being practically a development of the Socialist movement. In Great Britain the Co-operative movement was founded by disciples of Robert Owen, and its early literature is very socialistic in its teachings. Many of the leaders, and a large proportion of the membership, of the Co-operative movement in Great Britain are Socialists; but as a movement Co-operation has strictly refrained from identifying itself with either Socialist propaganda or the political Labour Party. The Constitution of the Co-operative Union declares that the object of the movement is 'to conciliate the conflicting interests of the capitalist, the worker, and the purchaser, through the equitable division among them of the fund commonly known as profit.' Few Co-operators now look to the efforts of voluntary association to completely establish the Co-operative Commonwealth, but all Co-operators hold that there is still a vast field in distribution and production which voluntary association can cultivate.

2. **Socialism.**—The political Labour movement, both on the continent of Europe and in Great Britain, is Socialistic, and has for its object the capture of political power, in order that by legislation and administration the reconstruction of industry and society on Collectivist principles may be carried out. On the Continent the movement is definitely Socialistic, both in name and in purpose. In Great Britain the present political

Labour Party was not constituted on a Socialist basis. At its inception it was mainly a Trade Union movement, carrying the struggle of the workers against the masters for a greater share of the produce of labour into the political arena; but by the force of circumstances, and by the efforts of the Socialists in the Labour Party, the British Labour Party is now for all practical purposes, and indeed claims to be, the counterpart of the Socialist parties on the Continent. The British Labour Party is affiliated to the International Socialist Bureau; it sends its delegates to the International Socialist Congresses; its secretary is the secretary of the British section of the International Socialist Bureau; and the programme of the party in all its definite proposals is identical with the Socialist programmes in other lands. The Congress of the British Labour Party has passed a resolution declaring 'that its ultimate object shall be the obtaining for the workers the full results of their labour by the overthrow of the present system of Capitalism, and the institution of a system of public ownership of all the means of production, distribution, and exchange.'

The words of this resolution express the object of the Socialist movement, which has its millions of adherents in the industrial countries of the world, its hundreds of representatives in the various Parliaments, its enormous literature, and an organization unequalled by any other political movement. Socialism, as has been said, is a principle and a purpose. We cannot enter here into a detailed account of the differences among Socialists on special points in economic theory and political policy, but the outline of Socialist theory and purpose which follows may be taken as expressing generally the principles and object of the world Socialist movement.

Socialists contend that under Capitalism the worker is deprived of his just share of the produce of the common labour. The private ownership of land and industrial capital enables the landlord and the capitalist to appropriate all the wealth which is produced, giving back to such workers as he may find it to be necessary or profitable to employ only sufficient to maintain them in a physical condition to enable them to work and propagate their species. Land is a common necessary, and land monopoly involves both economic and social subjection. Socialists maintain that land monopoly involves economic subjection, because it enables the landowner to dictate the economic terms of use, with all the advantage of the bargain on his side; and in actual practice it gives to the landowner the social increment of value to which he has contributed nothing. Land monopoly involves social subjection, because of the powers of the landowner to interfere with the personal liberty of the landless man.

Socialists place the Capitalist, as a monopolist, on the same footing as the landowner. If advantage is to be taken of modern scientific knowledge and machinery, then production must be carried on upon an extensive scale with the aid of steam-power, electricity, costly machinery, expensive factories, and all the other aids to economy and cheapness. The individual worker cannot in these days own the tools of his trade as was formerly the case. The worker cannot now work as an isolated and individual workman. He cannot now employ himself to supply his own needs and those of his family. Production is not now an individual matter for individual use, but a social operation for social use. It is, according to Socialism, these changes in the method of production which have destroyed the economic and moral justification for the individual ownership of the instruments of production and the means of distribution.

The work of industry is now necessarily Co-operative, and Co-operative on a world-wide scale. Socialists look forward eventually to the establishment of a Socialist State which shall be as wide in its government as the extent of the industrial Co-operation of the workers. But for the present they work for the establishment of Socialism within State limits, and at the same time fostering and promoting in every possible way fraternal relations between the workers of all lands. It is the fact that industry is now Co-operative in its character and working which has, according to Socialism, brought about the need for the Co-operative ownership of the instruments of production and distribution. Inside the workshop there is complete co-operation in all the operations of production and trade distribution of the products; but in the allocation of the respective shares of remuneration there is no co-operation between the owners and workers, and it is to this fact that Socialists attribute the cause of the poverty of the workers. They aim at extending the principle of Co-operation to ownership and control as well as to actual working.

Socialists contend that so long as land and capital are privately owned there cannot be any substantial improvement in the condition of the wage-paid class. The economy of production which comes from machine improvement, from better organization, from scientific advance, simply adds to the rents of the landowners and the profits of the capitalists. The tendency of this law may be influenced to a moderate extent by Trade Unionism and by legislation of a palliative character, but the futility of mere reform which leaves the ownership of land and capital in private hands is recognized by all Socialists, and is put in its extreme form by Karl Kautsky, the German Socialist leader, who says: 'Nine-tenths of the proposals for reform are not only useless, but are directly injurious to the exploited masses.' Such a remark is not intended to apply to reforms which transfer monopolies from private to public ownership, such as the nationalization of railways; but Socialists insist that such publicly owned services must be democratically managed and worked in the interests of the community, or the possibilities of public advantage will not be realized. So long as individuals own any part of the instruments of production or of the means of distribution, so long as workmen are in any measure dependent upon access to private capital for employment, so long will labour be deprived of the full share of its results.

All Socialists, therefore, are aiming at an industrial system where land, and all the capital which is necessary for the co-operative work of producing and distributing social necessaries, shall be owned by the whole community, and shall be democratically managed by the State or by local bodies, according as the concern be national or local in its extent. Socialists fortify their arguments by appealing to the experience and the tendencies of the last half-century. In the early days of the modern industrial era, when the power of Capitalism was uncontrolled by State interference, the horrors of private ownership and the dependence of Labour upon Capitalism were seen in all their appalling cruelty. The whole tendency of legislation, it is pointed out, has been to limit the freedom of the landowner and the capitalist in the interests of the community and the workers. The purpose of legislation has been to restrain individual licence where the exercise of it was injurious to society or to any body of workers. One English Socialist writer has pointed out that the tendency of British legislation towards Socialism is seen in four distinct directions—(1) By the constantly increasing restrictions upon the private ownership of land and capital; (2) by the gradual supersession of private enterprise by public ownership or services; (3) by the progressive absorption of the rents of the landowners and the profits of the Capitalists by taxation for public purposes; (4) by the supplementing and the supplanting of private charity by the public organization of help, with the object of raising the condition of the poorer classes.

Examples of the first class of legislation are seen in Public Health Acts, and in the Factory and Mining regulations. Under the second category come State businesses, such as the Post Office and the telephones; and the numerous municipal activities, such as water, gas, and electricity concerns, and tramways. The tendency under the third head is well known to everybody, and Old-Age Pensions and National Insurance are examples of the fourth category. Socialists look to the advancement of their purpose by the more rapid movement of the tendencies indicated by these examples. The transformation they seek to bring about is to be accomplished by the democratic use of political power working progressively by constitutional and moral means. Socialists generally have now abandoned the idea of the early Socialists that the overthrow of Capitalism would be brought about by a revolution, perhaps amid fire and bloodshed.

Every Socialist party has its programme of steps by which the Co-operative Commonwealth is to be reached. All these programmes assume that the transformation will be accomplished by the workers using political power. The Socialists demand a full measure of political enfranchisement, with equal rights for men and women. They support all palliative reforms, such as public health legislation, factory regulations, a shorter working day, maintenance of the sick and infirm, better education, not because they regard such reforms as radical, but because they improve the health and the intelligence of the workers, and thus increase their strength and power to carry on the economic struggle. Practical questions which find a place in the programmes of the Socialist parties are the nationalization of the railways and other means of transport; the nationalization of the mines and the land; the municipal ownership of all local public services; the conservation of national wealth in the water supplies and the woods; the national development of waterways, harbours, and the like; and the carrying out of all such schemes by funds raised by the further taxation of the rents and profits of land and capital. Practically all these proposals were put forward in the Communist manifesto by Marx and Engels in 1848.

The Socialist movement is rapidly undergoing a change from a theoretical and revolutionary character to a practical and political character. It was inevitable that this change should come as the Socialist movement increased in numbers, and began to participate in actual legislative and administrative work. There is a distinct tendency towards uniformity, not only in the definitely Socialist parties, but in the Labour and Socialist movement as a whole. They approximate most closely to uniformity in those countries where there is a large measure of constitutional government, and where the Socialists have representation on the governing body. The approximation to uniformity has been brought about by the non-Socialist Trade Union and Labour bodies moving towards the Socialist position, and by the Socialists, discarding their revolutionary and severely doctrinaire ideas, moving towards the other branches of the working-class movement. The signs at present seem to point to the dominant section of the international working-class movement being a practical—even opportunist, in the best sense of that word—non-doctrinaire party with collectivist aims, but more concerned about securing immediate reforms than about trying to realize impractical projects. While this will probably be the characteristic of the great body of the working-class movement of this and the next generation, there will be active sections which will dissent from the policy of the main body.

In such a virile movement as the Labour and Socialist movement there will always be diversity of opinions and ideas about methods and theories and policies. Neither can it be expected that the Socialist movement itself will take precisely the same form in all countries. The special character of the Socialist movement in any one country will be determined largely by the political history and the industrial development of the country. In its main features Socialism will be the same in all countries, but in its details it will assume an immense variety of forms. This disposition of the Labour movement to split into sections has been a marked feature of its history through all the nineteenth century, and this has been at no time more marked than it is to-day. This disposition for small sections to split from the main body is in no way inconsistent with the fact that the general tendency is towards greater uniformity in the great mass. The dissensions from the main body of the Socialist movement have never been numerically large, but they have attracted an amount of attention altogether out of proportion to their importance. The three main offshoots from the Socialist movement are the Communists, the Anarchists, and the Syndicalists.

3. **Communism.**—The difference between Communism and Socialism is one rather of degree than of principle and method. The early Socialist writers used the terms as synonymous. If there be any important distinction between Socialism and Communism, it is that Communism would hold all property, even personal effects, in common, and would distribute the products of common labour without regard to any consideration but the needs or desires of the individual. It is impossible to draw a clear distinction between Socialism and Communism. Some of our institutions of the present day are Communistic—as, for instance, the highways and public parks. These institutions every man uses

according to his needs or desires, without being called upon to pay according to the extent of his use. For the sake of clearness it would be well if the use of the word Communism could be confined to the experiments in communal living which have been made by small bodies of men and women who have separated themselves from the world and tried to live the full communal life. Such experiments are not Socialism. They are the negation of Socialism. Socialism does not seek to apply the full scheme to a few people, but to apply the principle gradually to the whole people. Such experiments in communal living have almost invariably ended in failure; and even if they succeed, they are not instances of the success of Socialism.

4. **Anarchism.**—There is a good deal of confusion in the popular mind of Socialism and Anarchism, and it is quite common to hear educated people speak as though the two names were one thing. There is nothing in common between Socialism and Anarchism, except that both are opposed to all aggression by which individual liberty, in the true sense of the word, is suppressed. But in their ideas as to the conditions of liberty the Socialists and the Anarchists are at opposite poles. The Socialist considers that individual liberty can only be secured through State organization and regulation, by which no man will be allowed to enjoy monopolies or to act in such a way as to infringe the liberty of others. There are two schools of Anarchists —the philosophical Anarchists, who do not believe in the use of force; and the Anarchist Communists, who do not believe in government, but who do believe in the use of force to overthrow the existing government. To this latter class the Syndicalists belong. Both schools of Anarchists repudiate the State. The philosophical Anarchists do not object to organization and co-operation, provided it be voluntary; but the

Syndicalists would impose the government of trades upon the whole community.

5. **Syndicalism.**—Syndicalism is the present-day form of Anarchist Communism. The first work expounding this theory was published in 1897 by Georges Sorel. A few distinguished Italian Socialists have become apostles of this new movement, but as yet its literature, like the number of its adherents, is very scanty. The Syndicalist movement arose from a belief that Socialism had lost its revolutionary force, and that it had become nothing more than a respectable profession or a mere reformist movement. The degeneracy of Socialists was attributed to the influence of Parliament and to the demoralizing opportunism of political action. That tendency to moderation among Parliamentary Socialists to which reference has been made is responsible for the uprising of Syndicalism. The Continental leaders of Syndicalism are careful to explain that they have not changed their theories or policy. It is the Socialists, they say, who have done that. The Syndicalists, they maintain, are the true Socialists, who still believe in the relentless prosecution of the war of classes, and who look to the overthrow of Capitalism by the force of a general rising of the workers. The Syndicalist looks upon the manual workers as being the only useful class, and as being separated by a clear cut from all other classes. They do not recognize the unity of classes or of society. To the Syndicalist, the only concern is with the interests of the wage-earning class. The intellectual leaders of Syndicalism, like Lagardelle, are utterly opposed to Parliamentary action. Syndicalism seeks to establish the working-class movement, not upon a political, but upon a Trade Union basis. The Trade Union basis for the organization of the proletariat, the Syndicalists declare, has great advantages. The Trade Union forms the unit for the future organization of industry when it has been seized by the workers.

Syndicalism does not decry organization; it insists upon it. First, the organization of the trade; then the federation of kindred trades; and finally, the combination of all the unions and federations into one great working-class organization. But Syndicalism would not adopt the old Trade Union methods. It is revolutionary. It lives on the revolutionary fervour. It deprecates the deliberate calculation of time and opportunity. It would not save up the funds of the workers to maintain them during a strike. The revolutionary fervour must feed them at such times. Strikes never would be protracted, they maintain, if the workers would act suddenly and unitedly. The general strike, not the ballot, is the weapon which, according to the [Syndicalist faith, is to bring the economic emancipation of the workers. A general strike of, say, the railwaymen, who would be aided by the workers in all other trades, would force the present owners to abdicate, and the railways would pass under the control of the railwaymen, to be worked by them in co-operation with the Central Council of Trade Unions. Such is the ideal of Syndicalism. It appealed to the imaginative and revolutionary temperament of the French workman for a time, but recently the Syndicalist movement in France has lost much of its popularity among the workmen. Though fantastic in some of their ideas and theories, the Syndicalists have fastened upon some of the weaknesses in the Socialist policy and in Trade Union methods, and by their criticism they will do both of these movements good. See NEW LABOUR MOVEMENTS.

As long as there are differences in men's temperaments there will be different policies within the Labour movement. But the political Labour movement, with Socialism as its goal, is the great main stream of the movement of the proletariat. In spite of these offshoots, such as Syndicalism and Anarchism, the Socialist movement makes continuous and rapid progress. According to the latest figures, the Socialist and Labour representation in the principal Parliaments of the world was as follows :—Germany, 110 ; Austria, 82 ; France, 76 ; Sweden, 64 ; Italy, 42 ; Australia, 41 (the Government) ; Belgium, 35 ; Denmark, 24 ; Finland, 87 ; Switzerland, 15 ; Holland, 7 ; Norway, 11 ; Turkey, 6 ; Greece, 10 ; Great Britain, 42. The extraordinary increase in the Socialist vote in Germany at the elections in January 1912 made a world-wide impression.

6. **Bibliography.**—The literature of Socialism and the Labour movement is very extensive. Much of it dealing with Socialist theory is not accessible to English readers ; but there is a very considerable library of works on Socialism by English writers and English translations of foreign works. For the use of those who wish to study the question a number of books are suggested. For an impartial and moderate statement of Socialism, the two books by Thomas Kirkup are recommended—namely, *An Inquiry into Socialism*, and the *History of Socialism.* One of the best short works on the Social movement is Professor Sobart's *Socialism and the Social Movement.* This work gives a very full account of the history and theory of Syndicalism, which is the only impartial account of that movement in English. Other works which may be recommended are *The New Socialism*, by J. T. Stoddart ; the volumes in the *Socialist Library*, which include translations of works by Bernstein, Vandervelde, Jaurès, and Ferri ; the *Fabian Essays* and *Fabian Tracts*, the latter dealing with the application of Socialist principles to practical reforms ; *Twentieth Century Socialism*, by E. Kelly ; Professor Flint's *Socialism ;* Schäffle's *Quintessence of Socialism* ; and Hyndman's *Historical Basis of Socialism in England* (secondhand only), and his *Economics of Socialism.* America in recent years has contributed some valuable works to Socialist literature, including

Hunter's *Socialists at Work*, Spargo's *Socialism*, and Hilquit's *History of Socialism in the United States.* A series of little books published under the title of the 'Labour Ideal Series' will be found useful. They deal with such subjects as 'Socialism and the City,' 'Socialism and the Empire,' 'Socialism and the Budget.'

P. S.

LABOUR EXCHANGES.

The term 'Labour Exchange' is defined in the Labour Exchanges Act of 1909 as meaning 'any office or place used for the purpose of collecting and furnishing information, either by the keeping of registers or otherwise, respecting employers who desire to engage workpeople, and workpeople who seek employment.' Construed widely, this definition covers a great variety of agencies, including private registry offices for domestic servants; Trade Union 'houses of call,' where men come to sign a register when unemployed, and where they may be sent for by an employer; and societies for finding employment for special classes, such as ex-soldiers and sailors, discharged prisoners, or cripples. In practice, however, the term 'Labour Exchange' is commonly confined to institutions of the type contemplated in the Labour Exchanges Act itself—namely, public offices set up by national or municipal authorities for the general use of all would-be employers or employees.

Institutions of this nature are to be found in varying degrees of development in all the more important European countries, the last ten years in particular having witnessed an increasing tendency to attach importance to them, as a necessary part of any systematic treatment of the various problems of unemployment. In the Board of Trade Report of 1904 on *Agencies* *and Methods for Dealing with the Unemployed in Foreign Countries*, special attention was called to 'the very considerable extension of these institutions in the last few years in Germany, Austria, France, Switzerland, and Belgium.' Since the date of that Report a similar tendency has shown itself in Sweden, Denmark, and Norway (where, in 1906, a law was passed for the establishment of free public labour registries in such towns and communes as may be determined by royal decree). In Belgium, Denmark, and Norway the attempt to develop Labour Exchanges has been made in close connection with schemes of insurance against unemployment.

Of all European countries, however, it is in Germany that public Labour Exchanges have attained their greatest development. The industrial depression of 1893–4 directed official attention to this subject, and the growth of public Labour Exchanges dates largely from circulars then issued by the more important State governments (Prussia, 1894; Bavaria, 1894; Wurtemberg, 1895), urging upon the local authorities the need for establishing such institutions. The State governments have not, however, in any case established Exchanges, and do not, except in Baden, contribute directly to their cost, such grants as are made by other State governments being small and limited to providing for 'clearing-house' arrangements between the different towns. The German Exchanges themselves are thus essentially local, being maintained in some cases by the municipality itself (this is the rule in South Germany), and in others by a voluntary association with municipal support (Berlin, Dresden, and Leipzig are important Exchanges of this type). All the more important Exchanges belong to a 'Federation of German Public Labour Exchanges,' which is active in promoting co-operation between the different towns, and co-ordinating their methods. At the end of 1910 there were in Germany 475 Exchanges maintained or subsidized by public authorities, which filled between them during the year 1,087,439 vacancies for employment. Of these about 700,000 were for men, and 350,000 (including 70,000 indoor domestic servants) for women. Though the Public Labour Exchanges of Germany have thus secured a large measure of success, there has of recent years been a growing movement on the part of employers' associations to set up their own systems of Exchanges, intended to serve both for the organization of the labour market and as weapons in industrial warfare with the Trade Unions.

In the United Kingdom the first Labour Bureau appears to have been one established by voluntary action at Egham in 1885; while from 1892 onwards bureaus were started, chiefly in connection with the relief of distress, by a certain number of municipalities, and in a few cases maintained a somewhat shadowy existence till the passage of the Unemployed Workman Act, 1905. That Act had as its main object the relief of distress by provision of employment under artificial conditions, but included also a power to establish Labour Exchanges. Only one authority, however—the Central (Unemployed) Body for London—made any considerable use of this power, establishing in 1906 a system of 'Metropolitan Employment Exchanges,' distinct from, and additional to, the organization of distress committees for relief purposes, and connected by a central clearing-house. This system continued in active and growing operation till the beginning of 1910, when it was taken over by the Board of Trade, under the Labour Exchanges Act. At that date it included twenty Exchanges, which, during the last twelve months of their existence, filled 30,580 vacancies for employment.

In 1909 the Royal Commission on the Poor Laws and the Relief of Distress recommended the establishment of a national system of Labour Exchanges as the first step for dealing with unemployment, and by the Labour Exchanges Act of the same year the Board of Trade were empowered to set up such a system. The first Exchanges under this Act were opened in February 1910, and by the end of 1911, 261 were in operation; while by the end of 1912, when the system should be fairly complete, there will be over 400. There will then be an Exchange in each of the larger towns of the United Kingdom (down to about 20,000 inhabitants), and in a good many smaller ones. For the purposes of the scheme of Unemployment Insurance (National Insurance Act, Part II.), which will be administered through the Exchanges, there will be added to the Labour Exchange system a large number of local agents in the smaller towns and country districts, who will undertake the registration of unemployed workmen in the insured trades and payment of benefits to them. See UNEMPLOYMENT.

The Exchanges are open, without charge, to all classes of employees, whether 'workmen' in a strict sense or not, and deal with all classes of vacancies, except those for indoor domestic servants in private houses (though they are not subject to any statutory restriction in this respect). Workpeople residing within three miles of an Exchange are required to register in person, either by answering questions or filling up a form; others may make application by post. Registration lasts for a week, unless employment is found earlier, and, unless registration is renewed then, the applicant's name is removed from the live register. If a workman is offered employment at a distance through an Exchange, the latter can advance him his railway fare to the place of employment. During the year 1911 such advances were made in about 9,000 cases, making a total of £2,545, of which £2,185 was recovered.

During the first eleven months ending December 31, 1910, the Exchanges filled altogether 373,313 vacancies for employment. Their activity during 1911 is shown in the following table:—

GENERAL REGISTER.

	Men and Boys.	Women and Girls.	Total.
Applications received from workpeople	1,439,703	506,060	1,945,763
Vacancies notified by employers	537,296	223,642	760,938
Vacancies filled	424,892	168,847	593,739
CASUAL REGISTER.			
Jobs given	112,492	12,812	125,304

The total number of applicants during the year, representing separate individuals, except in so far as the same person may have applied to more than one Exchange, was 1,420,408. The average number of persons on the live register (that is, of persons who have registered or renewed their registrations within the past week, and have not since then been placed in employment) at the end of each month of 1911 was about 80,000.

Of the vacancies filled for men the largest numbers are in building; metals, engineering, and shipbuilding; transport; and general labour. For women the bulk of the vacancies are in domestic (outdoor) service, preparation and sale of food and drink, textiles and dress. Generally speaking, the greater part of the work is in the placing of skilled men and women.

The main features of the foregoing system of Labour Exchanges are summed up by saying that it is national, free, voluntary, industrial, and neutral as between employers and employed. The system is national in a double sense: it covers, or will cover, the whole United Kingdom; and it is maintained by a national, not a local, authority (the Board of Trade), out of national funds. In this respect the United Kingdom differs from all other countries. The system is free, in the sense that no charge is made, either to employers or to workpeople, for its service. This is the general rule with similar institutions in other countries, though one or two (for example, the Berlin Exchange) charge a small fee to all workpeople, while a good many more charge fees in respect of domestic servants. The system is voluntary, in that its use depends upon the voluntary resort of both parties. The system is industrial, in the sense of not being connected with the relief of distress, whether by Poor Law or by charity. Men are submitted for employment according to their industrial qualifications, and not with reference to their poverty. The system is neutral as between employers and employed, in the sense that it leaves all questions where the interests of the two parties are or may be opposed to be settled between them, and confines itself only to giving information. As regards wages and conditions of service, for instance, the general regulations provide that 'the officer in charge of a Labour Exchange in notifying applications for employment and vacancies to employers and applicants respectively shall undertake no responsibility with regard to wages or other conditions, beyond supplying the employer or applicant, as the case may be, with any information in his possession as to the rate of wages desired or offered.' As regards trade disputes, the rule is that the Exchanges notify to workmen, if required, vacancies created by a dispute, but at the same time leave the latter to decide whether or not they will apply for the vacancies in question.

The general object of the Labour Exchanges is to remedy two general defects of the modern industrial organization indicated by the Reports of the Royal Commission on the Poor Laws—namely (1) lack of mobility of labour, and (2) lack of information as to employment and unemployment. Among their special objects may be noted the following :—

1. The 'decasualization' of casual employment by gradually confining the work in large areas of such employment to the smallest number of individuals sufficient to do it, instead of allowing the work to be spread over an unnecessarily large number of 'under-employed' casuals. Not very much has actually been done as yet in this direction by the Exchanges, which have tended on the whole to deal with the better rather than with the lower classes of labour. One or two Exchanges, however, have been established for special kinds of casual employment, and have dealt with them successfully; while during the year 1912 schemes have been set on foot at Liverpool and Goole for securing the decasualization of dock labour in connection with the payment of contributions under Part I. of the National Insurance Act.

2. The dovetailing of one seasonal trade with another.

3. The guidance, in conjunction with local education authorities, of boys and girls in the choice of careers, so as to divert the stream of juvenile labour away from the overcrowded occupations and towards the growing trades. For this purpose Special Advisory Committees for Juvenile Employment have been appointed by the Board of Trade in London and a number of provincial towns, these committees having the twofold function of advising the Board of Trade on the management of the Exchanges in relation to juvenile applicants (boys and girls under seventeen), and of arranging to advise and supervise the boys and girls themselves. In other places co-operation between the Labour Exchanges and the Education Authorities for the same purposes has been arranged under the Education (Choice of Employment) Act, 1910.

4. The abolition of any necessity for the genuine workman to tramp from town to town in search of work, so as to make it possible to deal stringently with idle vagrancy.

5. The provision of a direct 'test of unemployment,' without which unemployment insurance cannot safely be undertaken. By a 'test of unemployment' here is meant a test, not simply or mainly of whether a workman is actually unemployed—that is, not working on any day—but rather of whether suitable employment is anywhere open to him. Clearly an insurance scheme not backed by a Labour Exchange would always be liable to be paying benefits to men as unemployed who might be at work if they had sought work in the right place. On the other hand, an insurance scheme backed by an efficient Exchange—that is, one to which practically all vacancies for employment were notified immediately—could be absolutely secure against this risk. On this point the conclusion of the Report made in 1906 by the German Imperial Statistical Department as to the possibilities of general unemployment insurance was emphatic. 'On one point all proposals agree—one point emerges clear in the adjudication of every practical scheme—that in every form of unemployed benefit or insurance an adequate system of Labour Exchanges is of the first importance.' The system of Exchanges in the United Kingdom was accordingly established, and has been developed very largely with a view to serving as the machinery for the proposed scheme of insurance against unemployment.

See *Reports of the Royal Commission on the Poor Laws and Relief of Distress*, 'Majority,' Part VI., chap. IV.; 'Minority,' Part II., chap. V. (1909, cd. 4,499). W. H. Beveridge, *Unemployment: a Problem of Industry* (1909). *Labour Exchanges Act*, 1909. *General Regulations and Special Rules for Juvenile Applicants*. *Labour Gazette* (Board of Trade), containing monthly statistics. Y.

Labour Party. See TRADE UNIONS; LABOUR AND POLITICS.

Laundries. See FACTORY ACTS.

Liability, Employers'. See EMPLOYERS' LIABILITY.

Lock-out. See STRIKES.

Machinery, Effect of. See INDUSTRIALISM, HISTORY OF.

Meals, Provision of, in Factories. See MODEL FACTORIES AND VILLAGES.

MEASUREMENT OF INDUSTRIAL CHANGES.

1. *Percentages.*
2. *Averages.*
3. *Quartiles.*
4. *Index Numbers.*
5. *Weighted Index Numbers.*
6. *Bibliography.*

Measurement of industrial changes can be effected, more or less satisfactorily, by a number of statistical devices, of which it is the purpose of this article to give a brief review.

1. **Percentages.**—One method commonly used is to calculate the proportion which one simple total bears to another, and then to compare these totals for different dates. This may be done by means of *percentages*. Thus, the number of members of Trade Unions returned as unemployed at the end of one month may be expressed as a percentage of the total number of members of unions making returns, and compared with the percentage similarly obtained at the end of some other month. This is the method on which is constructed the Employment Chart on the first page of the Board of Trade *Labour Gazette*. Similarly, in considering shipping, the tonnage of British ships may be expressed as a percentage of the total tonnage employed in the

world. Or a total may be related to the number of the population to which it refers. Thus, the annual *Statistical Abstract for the United Kingdom* presents a table showing, for the last fifteen years, the value of the imports and exports into and from the United Kingdom, 'with the proportion thereof *per head* of total population.' Here it should be observed that the population is exactly known only for census years, and the figure employed for intercensal years is necessarily the result of an estimate. Similarly, *per head* or *per capita* calculations are common in statistics showing the changes in the consumption of commodities. Or, again, the proportion may be reckoned which a total bears to some convenient number of the population: thus, in the case of certain important 'vital statistics,' such as birth or death *rates*, the calculation is commonly per thousand of the population, and the same plan is often adopted for other statistics—for example, of emigration.

2. **Averages.**—In a large part, however, of the economic field we cannot be content with simple totals. We have to make use of *averages* or *means*. What are known as 'geometric' and 'harmonic' averages or means have been occasionally employed by statisticians; but the usual average, and what is commonly understood by that term, is the *arithmetic* average—that is, the result obtained by dividing the sum of a number of instances by the number of instances. Now, obviously, an average can be obtained from any set of figures; but it is a merely arithmetical result unless it reaches a conclusion which may be regarded as *typical* or characteristic. It will have this character if the great majority of the instances approximate to it, on one side or the other, pretty closely, even though it may not be precisely identical with any one of the actual cases. Indeed, in popular speech, 'average' is constantly used as a synonym for usual.

The very facility with which averages can be reckoned causes their employment to be attended with manifold dangers. The principal directions in which caution is called for may be illustrated from wages statistics; though what will now be said is applicable in most other fields of inquiry.

(1.) The matter which is the subject of inquiry must first be clearly defined. Thus 'wages' may be either 'rates' of wages per piece or per unit of time, or actual 'earnings.' The latter will be affected by the amount of employment obtained at the several rates, and by the extent of overtime, etc. The difference between average weekly wages based on a presumed full week's work at a specified rate per hour and actual average weekly earnings may be illustrated from the *Report of the Massachusetts Bureau of Labor* for 1904, according to which, in the cases reported on, 16·78 per cent. of the total possible working time was lost, and average earnings, instead of being $18·28, as they would have been for full working time, were only $15·25. 'Earnings,' again, may be defined to include, as in recent reports on agricultural labourers, besides the nominal weekly wages, both the money payments for extra piecework and also various allowances received in kind but susceptible of a money valuation. In this sense of 'earnings' it was calculated by Mr. Wilson Fox that, in the closing years of last century, the 'ordinary' or 'weekly' wage of the English agricultural labourer made up only 72 per cent. of the actual average weekly 'earnings;' and that, while 'weekly wages' between 1851 and 1901 had increased 60 per cent., 'earnings' had increased only 51 per cent.

(2.) The number of cases must be sufficiently large to avoid the risks caused by the inclusion of exceptional cases.

(3.) Averages are only valuable where the data are homogeneous—that is, where the work is of the same grade, and the differences of earnings are due only to the usual losses of time, or, with pieceworkers, the usual differences of skill. It is obvious that men and women, boys and girls, full-timers and half-timers, should always be distinguished; and the same is true of branches of an industry with markedly different earnings, and also of distinct grades in the same branch. Simple general arithmetic averages for a whole industry are now recognized as valueless. It is meaningless, for instance, to report that the average daily pay of cotton operatives in the United States was 44 cents in 1820–30, 90 cents in 1830–50, $1·03 in 1860–70, and $1·40 in 1880, unless it can be assumed that the distribution as to sex, age, branch, and grade remained unchanged. When the averages are themselves derived from averages, the risks of misrepresentation are all the greater, as where, in one famous American case, the wages of 133 labourers in an establishment increased in one year 29·5 per cent., and those of a single 'brewer,' put in a class by himself, 275 per cent., and the average increase for the whole establishment was returned as 152·25 per cent.

3. **Quartiles.**—Where, however, the average is clearly one of a homogeneous class, with comparatively small variations from one end of the list to the other, the differences between the extremes may still be so great as to make it desirable to supplement the average by further information. This may be obtained by arranging the individual cases in a list, in order of amounts, beginning with the highest, and then dividing them one-quarter, one-half, and three-quarters of the way down (points known technically as the *upper quartile*, the *median*, and the *lower quartile*). This method was first officially used in England in the *Reports on Earnings and Hours of Labour* (1909–11). Thus the information in the *Textile* volume is presented in the summary table in the following form:—

	Number.	Average Wages.		Lower Quartile.		Median.		Upper Quartile.	
		s.	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*
Braidmakers .	17	11	6	9	6	11	6	13	6

This indicates not only that the average wage was 11s. 6d., but that half the workpeople received from 9s. 6d. to 13s. 6d., and only a quarter respectively above and below that range. A range of amounts as nearly as possible approaching to this 'interquartile' range has similarly been selected in a recent investigation as to rents (in the *Report on Cost of Living*, 1909), and there designated the *predominant* range.

4. Index Numbers.—Where quantities have to be compared which cannot be directly measured, 'either,' as the *First Fiscal Blue-book* (1903) remarks, 'owing to the complication of the data or to the imperfection of our knowledge,' it is necessary to fall back on what are known as *Index Numbers*, which, however, are nothing but combined percentages. The method was first, and for a long time exclusively, employed in measuring the change in general prices, or—what was the same thing in other words—the purchasing power of money. Unable to collect the prices of all commodities, a number of commodities were selected which were thought to be sufficiently representative of the whole. The price of each in a standard year (or the average price for a standard series of years) was called 100; its price in every succeeding year was expressed as a percentage of this; and the percentages for all the commodities in each year were added up, and the sum, either unchanged or itself expressed as a percentage of the whole, formed the index number for that year. Such index numbers are most readily compiled for wholesale commodities, and, until recently, the only calculations available have been of that character. The best-known wholesale index numbers have been those of the *Economist*, based on twenty-two commodities, and taking 1845–50 as the standard period, and coming to an end, in its old form, in 1911; of Mr. Sauerbeck, based on forty-five commodities, with 1867–77 as the standard period; those of the Hamburg statistician Soetbeer, with 114 articles; and of the American, Professor Falkner, with 223 articles. A good deal depends on the selection and number of the commodities. For instance, it has been calculated that if all four of the above-mentioned index numbers are adjusted to 1860 as standard (= 100), the index number for 1891 will work out,

according to the *Economist*, at 81·0
" " Sauerbeck, " 75·4
" " Soetbeer, " 90·3
" " Falkner, " 92·2

The explanation of the fact that the introduction, after a certain point has been reached, of a larger number of articles raises the index number is no doubt largely to be found in the circumstance that the smaller lists consist more entirely of raw materials or food-stuffs, and that the prices of manufactured goods tend, for obvious reasons, to move within smaller limits.

5. **Weighted Index Numbers.**—But, however short the list, undue influence in the formation of the average is sure to be exercised by the prices of some of the commodities. Thus, in the old *Economist* index number, indigo counted for as much as wheat; and during the years of the cotton famine, the index number was unduly raised by that special cause, inasmuch as raw cotton, cotton yarn, and cotton cloth each counted as one among the twenty-two commodities. Hence the practice has been largely adopted of *weighting* the figures which go to make up the index number according to some scale of relative importance. If there were in a room a number of men just five feet high and a number just six feet high, one would not find out the average height by adding five and six

and dividing by two; one would find out how many there were of each height, multiply the heights by the respective number of men, and divide by the total number. Similarly, it is easy to multiply the figure representing price by a number or 'weight' representing its relative importance, and divide the total of all the figures thus multiplied by the sum of the weights. The most suitable weights in such a case as prices would seem to be the proportions in which the several articles enter into consumption. Mr. (now Sir Robert) Palgrave accordingly weighted the *Economist's* index numbers by figures representing the relative place of each commodity in the consumption of the United Kingdom, as shown by the comparative money values of the quantities consumed in a year, with the following results:—

Year.	Simple.	Weighted.
1865–9	100	100
1870	91	90
1871	90	93
1872	97	100
1873	102	104
1874	100	108
1875	95	97
1876	93	99
1877	94	100
1878	87	95
1879	76	82
1880	87	89
1881	81	93
1882	83	87
1883	80	88
1884	75	80
1885	70	76

Weighting, it will be seen, has little effect on the general trend, but makes a considerable difference for particular years, and also, in this case at any rate, results in figures somewhat above those resulting from simple averages. Palgrave's plan has been followed in the *Board of Trade Index Number for Wholesale Com-*

modities, which includes forty-five articles, takes 1900 as the standard year, and starts with 1871. A plan identical in principle has been adopted in the *Board of Trade's Index Number for Retail Food in London*, where the several constituents are weighted in the proportion in which they enter into working-class consumption, as ascertained from a collection of workmen's budgets (see COST OF LIVING).

In recent years the method of index numbers has been extended from prices to wages, rents, and other economic phenomena. Thus the Board of Trade publishes in the annual *Abstract of Labour Statistics* index numbers representing 'the general course of wages in the United Kingdom' since 1879, taking 1900 as the standard year. From figures representing the percentage variations of wages in five industrial groups—building trades, coal-mining, engineering, textile, and agriculture (arrived at by an elaborate process of simple averaging of rates in four cases and of weighting in the fifth)—it arrives at a simple unweighted mean of the whole. Professor Bowley has proceeded a step farther, and has assigned to the figures representing the several trades weights representing the changes in the numbers employed in each in the several quinquennial periods from 1850 to 1904, reaching, accordingly, a series of index numbers which show the movement in average wages due both to changes of remuneration within the several trades, and also to the varying distribution of the population between the several industries. Such index numbers have sometimes been spoken of as 'dynamic,' while those presupposing no change in the distribution of the population have, in contrast, been called 'static.'

A final illustration of weighting may be taken from the *Board of Trade's Index Numbers of Employment*. These are based on the returns of unemployment received from certain Trade Unions. But the engineering, metal, and shipbuilding trades are more subject to fluctuation than the others represented in the report. And as this group of trades has furnished a diminishing proportion of the whole as time went on (from three-fifths in 1860–70 to two-fifths in 1890–2), the unweighted resultant figures would show a diminution of the irregularity of employment caused, not by a change of industrial conditions, but simply by a change in the character of the statistical material. To obviate this defect, a figure has been calculated separately for the engineering, etc., group, and another figure for 'all other trades included in the returns,' and the final figure has been derived from an average of the two. This is, in effect, to give an *equal* weight to the two groups throughout.

6. **Bibliography.**—For accounts and criticism of Index Numbers, see R. Mayo Smith's *Statistics and Economics*, 1899; Mr. Fountain's Memorandum in the *Report on Wholesale and Retail Prices*, Cd. 321, 1903; and the Memorandum in the Canadian Report on *Wholesale Prices in Canada*, 1910. The most valuable English figures, accompanied by instructive memoranda on the methods employed, are to be found in the Reports (both 'blue-books' and 'buff-books') of the Board of Trade published during the last decade. Chief among these are the two series of Memoranda on *British and Foreign Trade and Industry*, Cd. 1,761 (1903), and Cd. 2,337 (1904); the series on *Cost of Living* in the United Kingdom and certain other foreign countries (1908–11); and the series on *Earnings and Hours of Labour* in the several industries (from 1909). Almost all the governmental statistics of first importance are given either in the annual *Statistical Abstract for the United Kingdom* or in the annual *Abstract of Labour Statistics*. Reference should also be made to the works of Professor A. L. Bowley, and especially to his *Wages in the United Kingdom* (1900); his *Elements of Statistics* (2nd ed.,

1902); his *Elementary Manual of Statistics* (1910); and to his article on 'Wages' in the Appendix to Palgrave's *Dictionary of Political Economy* (1908).

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METHODS OF INDUSTRIAL PEACE.

France and Germany.
Great Britain.
United States.
New Zealand.
Australian States.
Bibliography.

In dealing with methods of Industrial Peace, it is important to distinguish between disagreements arising out of the interpretation of existing contracts of minor importance, on the one hand; and, on the other hand, those which involve an extensive alteration of existing conditions of labour, whether in the matter of wages or not. As regards the former, no great difficulty confronts one in deciding upon a policy. These are disputes which should not be allowed to lead to extensive or protracted strikes. Their reference to expert arbitration is generally recommended, especially in view of the fact that the interpretation of contracts is a subject upon which an impartial mind, and particularly a legal mind, should find no difficulty, ordinarily, in coming to a decision. For many years minor disputes between employers and employed have been settled in France and Germany by special courts—in France by the *Conseils de Prud'hommes*, and in Germany by the *Gewerbegerichte*, the form of which was borrowed from the corresponding institution in France. These courts trace their origin to the habits acquired in relation to the old Gild Courts. They began to be instituted early in the nineteenth century in imitation of Gild Courts, after the abolition of the latter. On them employers and workmen are both represented. The British Labour Commission of 1904, while it was not prepared to make a sweeping recommendation, suggested that experiments might be tried with courts of the same character in this country.

A much larger and more serious problem confronts us when we ask ourselves how best alterations can be effected in wages and conditions of labour without strikes and lock-outs. The problem will be considered here with reference to the experiences of different countries, and also from the point of view of theory. Though English experience with arbitration goes back indefinitely, nothing really effective was done by the legislature until after the famous experiments associated with the names of Mr. Mundella and Sir Rupert Kettle. It was in connection with the Board of Arbitration and Conciliation for the Hosiery and Glove Trade, created at Nottingham in 1860, that Mr. Mundella did his admirable work. This Board was representative of employers and operatives. Sir Rupert Kettle's valuable services were associated with the Wolverhampton Board of Arbitration and Conciliation in the Building Trades, instituted in 1864, a Board which was similarly representative of both parties. So successful did these institutions prove that the Government was encouraged to try to promote industrial peace in 1867. However, the measure born in that year, which provided that Boards, if constituted in a certain manner, might obtain by licence powers to enforce their awards, proved entirely abortive, as did also another Act of 1872. The failure of these two pieces of legislation was probably due to the fact that they only very imperfectly reflected the tendencies of the period, and that the time had not yet come for setting aside experiments and falling in with a uniform plan. Conditions were much more promising when the celebrated Labour Commission put forth its judicious report in

1894. It was upon this report, so far as it related to methods of industrial peace, that the Government legislated in 1896.

The Act of 1896 made a clear sweep of previous legislation, and approached the problem in a tentative fashion, contemplating experiments in many forms rather than a cast-iron system. It was largely permissive in character. The formation of Boards of Conciliation, Trade Boards, District Boards, and General Boards, and their registration, was advised; and the Board of Trade was empowered to approach contesting parties, or, upon the application of one party, to appoint a conciliator or Board of Conciliation, or, on the application of both parties, to appoint an arbitrator. Such important work was done under this Act that the Government was inspired in 1911 to strengthen the scheme by instituting a joint panel of employers and representatives of labour, and by appointing a permanent official (Sir George Askwith), whose efforts previously under the Act of 1896 had proved so eminently successful. At this point it is needful to make a passing reference to the Minimum Wage Bill of 1912, which brought to a close the colliers' strike of that year, and remark that this Act raises special issues, inasmuch as it relates exclusively to an industry which has been regarded by the State for many years as something of an exception.

There is every reason to suppose that the good done under the new arrangements of 1911 will be even greater than the very considerable benefit which resulted from the Act of 1896. The only fear is that the expectation of intervention may lead to disputes which otherwise might never have come to a head; but whether any such tendency will prove serious or not the future alone can show. It is to be hoped that it will become customary for reference to be made to the Board of Trade before strikes or lock-outs are entered upon, after masters and men have failed to agree. It is not unlikely that in many cases of such reference it would be found that a satisfactory compromise was not really unattainable. In order to ensure this postponement of outbreak until impartial people have had time to look into the matter, Canada has passed a law (1907) under which cessation of work is forbidden in certain public service industries, such as transport, until an official inquiry and attempt to settle the dispute has been made, if either party applies. The recommendations put forward as a result of the inquiry are not enforced, but they are made public. A similar inquiry and attempt at conciliation is required in other industries on application from both disputing parties.

The distinctive feature of the English methods of industrial peace existing at the present time, it will be observed, is the confidence reposed in the disputants to reach a solution of their troubles by continued discussion. All that the State does is to mediate, prevent premature outbreak, and lend aid in the form of the helpful suggestions which men of wide experience can so easily make, if it is found that conflict of interest is irreconcilable. The opinion of most competent students of this question is that, in a very large number of cases, conflict of interest is not really irreconcilable, but that negotiations get broken off too hastily in consequence of the heat generated in the process of bargaining. To generalize from English experience, it would seem that the solution of the problem of industrial peace is to be found in the Joint Wages Board, representative of masters and men, because they alone are in possession of the relevant facts; in this on the one hand, and, on the other hand, in the watchful foresight of the unbiassed intermediary, whose main function it is to prevent a hasty appeal to the strike or lock-out.

Both France and Germany have arrangements closely analogous to those brought about by the Act of 1896. The German Law of 1890, which has since been modified, and the French Law of 1892 both bring official conciliatory machinery to bear when strikes or lock-outs seem imminent, provided that conciliatory intervention is not resisted by either disputant; but it cannot be said, as yet, that the utilizing of this machinery has become a regular thing in either country.

In the United States, as one might expect from the greater individualism of its people and from the great diversity of its conditions, less use has been made of conciliation than in England, and there is less uniformity about such provision as is made. State law to compel resort to arbitration and to enforce awards is not unknown, but it has proved a dead letter. Most industrial States at the present time have followed the example set by New York and Massachusetts in 1886 in instituting State Boards, and providing for voluntary resort to arbitration or conciliation; and in many places it has become not unusual for some State official to act as mediator when there seems to be any prospect that good will result from his doing so. The famous American Industrial Commission considered the question of industrial peace at some length, and was not prepared to recommend any departure from the voluntary basis. It refused to endorse or reject the proposal that the Government should compel arbitration when strikes became so prolonged and bitter as to threaten lives and property; but it admitted that in the public service trades, upon the continued activity of which the life of every advanced community is so intimately dependent, the responsibility of the State to bring about settlement somehow was peculiarly strong. On the whole, however, it was prepared to put its trust, as England has done, in the conference. There is one striking institution in America of which notice should be taken—that is, the National Civic

Association, into which the Civic Federation of Chicago was transformed in 1900, after six years of active and successful work. Its aim is to provide Conciliators or Boards of Conciliation, and to make offers of mediation. Its value was unstintingly recognized by all the members of the Mosely Commission which visited America in 1903.

The most sensational attempts to abolish industrial warfare are unquestionably those which have been made in recent years in New Zealand and Australia. The new ideas originated in New Zealand in 1894, when an Act was passed, the object of which was compulsorily to substitute conciliation or arbitration for strikes and lock-outs in the matter of the final settlement of points in dispute between employers and employees. The Act has been amended from time to time—the necessity of modification is easily comprehensible when we bear in mind the novelty of the policy laid down by the Act—but no fundamental change has been made in the notions underlying it. A number of Conciliation Boards were instituted, consisting of representatives of employers and employees, and, in addition, an Arbitration Court was set up to adjudicate on cases which proved to be incapable of settlement by conciliation. It turned out that a very large number of cases had to be passed on from the Conciliation Boards to the Arbitration Court; and, partly in consequence of this, an alteration has been made in the law which allows disputants to approach the Arbitration Court in the first instance. Originally it was hoped that most disputes would be settled by conciliation; and in view of the comparatively successful results attained by that method in one of the districts, it is questionable whether it was not premature to sanction the omission of the conciliation stage in the new procedure. While it would be inaccurate to say that strikes and lock-outs have been entirely abolished in New Zealand, as a result of Mr. Pember Reeves's measure, it must be allowed that since its adoption they have become incomparably fewer and far less serious. The jurisdiction of the Boards and Courts may be regarded broadly as relating to all conditions incidental to industrial employment.

The first State to imitate New Zealand was Western Australia, whose Act of 1900 was modelled on that of New Zealand. The Act of 1900 was replaced by another in 1902. In New South Wales, Bills intended to promote industrial peace were introduced as early as 1882, but the first law was not passed until 1892. This was allowed to lapse after a period of four years, but another measure was adopted in 1899, though neither of this nor of its predecessor was much use made. The first really important scheme was Mr. Wise's Compulsory Arbitration Bill of 1901, which, since its adoption, has been amended more than once in points of detail. The significant thing is that in the arrangements inaugurated by this Act there are no Boards of Conciliation, but a single Arbitration Court, presided over by a Judge of the Supreme Court, with whom are associated two persons representative respectively of industrial unions of employers and employed. As regards the workpeople, only Trade Unions can register, so as to obtain status before the Court, whereas in New Zealand any body of workpeople can register.

The new ideas have spread even to federal legislation in Australia. In 1904 a Federal Arbitration Bill became law. It continues the principle of absolutely prohibiting strikes and lock-outs; but, as in the case of similar measures, there is no chance of its proving entirely successful in this respect. It sets up a Court of Arbitration unaccompanied by Conciliation Boards, and it is notable that the Court consists solely of a Judge of the Supreme Court. No representative of employers or of employees figures in it. The jurisdiction of the Court extends over all matters which do not fall within the cognizance of State legislation.

Of Australasian State experiments with the labour question, those made in Victoria have been left to the last, because, though fundamentally they are founded upon the same ideas as the legislation which has already been reviewed, they embody striking differences in form. Victoria made the new departure with the intention of suppressing sweating, and to that end she instituted Joint Wages Boards in certain trades which were peculiarly liable to this evil. Originally there were only six Boards, but since the start they have increased some sevenfold. At first they were required to decree minimum rates, but at present they all aim at declaring rates which shall be regarded as standard. The significant difference between the Wages Boards system and the systems already described is that the latter contemplate primarily the settlement of disputes when they have arisen, whereas the former are intended to bring about such conditions as will prevent disputes from arising. Under all these schemes breaches of awards are, of course, punishable.

It is impossible to say how successful these Australasian schemes will prove eventually. Evasion and even direct contravention of awards are not unknown, and it is exceedingly difficult to prevent them altogether; but that a greater peaceableness now pervades Australasian industrial conditions cannot be denied. The fundamental difficulty in all plans of this kind is, of course, to obtain the right kind of evidence to enable the Board or Court in question to settle wages and conditions of labour in a manner that is on the whole satisfactory to workpeople and employers, and at the same time will not retard industrial changes. For these one must be prepared in a world in which demand and the methods of production and the lines of international division of labour are constantly altering. Industrial changes can only be resisted or substantially retarded to the ultimate loss of the whole community. Fortunately for Australia and New Zealand, the chance that any grave results will follow from mistaken decisions is enormously reduced by the fact that agricultural pursuits fall outside the scope of the Acts, so that any labour or capital which is discouraged from finding industrial employment has its outlet in connection with the land. It goes without saying that in so extensively industrialized a country as England, such a safety valve would be less capable of doing the work required of it; and consequently schemes which may have but small drawbacks under conditions which prevail in the Australasian Colonies might prove so dangerous under English conditions as to render grave calamity a probable result of their adoption.

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Minimum Wage. See STRIKES.

MODEL FACTORIES AND VILLAGES.

Model Factories.
Welfare Work.
Rest Rooms.
Convalescent Homes.
Provision of Meals—Dining-rooms.
Philanthropic Schemes.
Educational Facilities.
Housing Schemes.
Garden Villages in England and elsewhere.
Bibliography.

There are certain employers who object to the word 'Model' as used in the title of this article. To them it savours of assumption, and suggests finality. It has, however, an accepted meaning in this connection, and while bearing the criticism in mind, it may be permissible to use the word without cavil.

As employed now it has special reference to the arrangements made for the comfort and health of employees. In the early days of the factory era the conditions of labour were often deplorable. The present change is due to many causes, among them the recognition by certain enlightened employers that the best work can only result from the best conditions, and that cash payment is not the 'sole nexus' between Capital and Labour.

It is often difficult to say where a river takes its rise, and similarly not a few names have been associated with the origin of this movement. There is, however, one name which may be mentioned without hesitation—that of Robert Owen. He undoubtedly was an early pioneer, and accomplished great things at the mills of the New Lanark Twist Co. Another to whom honour is due is Sir Titus Salt, who did much to improve the condition of the employees in his great woollen mills, and in 1853 founded for them the village of Saltaire.

About the same time Messrs. Richardson established the village of Bessbrook for the people employed at their linen mills near Newry.

From beginnings like these the movement grew, until it is now firmly and widely established.

Welfare work, as it has come to be called, finds expression in many ways, and involves a large expenditure of time and thought upon initiation and organization. In some businesses the principals keep this in their own hands; in others, while maintaining a close and sympathetic oversight, they delegate it largely to an official known as the 'social secretary,' or 'welfare manager.' This office has gradually grown in importance, and it is now often filled by college graduates, glad of the opportunity for social work which it offers. Several such workers are frequently found in one factory.

Besides the social secretary, there are other channels by means of which the principals and the workpeople are brought into contact for the benefit of all concerned. Take, for instance, the 'suggestion schemes' now found in many factories. By means of this any worker can send in his suggestion and be certain that it will receive careful and impartial consideration at the hands of a competent committee. The suggestions may relate to welfare work, processes of manufacture, fencing of machinery, or anything within the wide compass of factory life. Prizes are given for the best suggestions, and considerable importance is usually attached to the occasion when they are distributed.

Further, the practice is increasing of holding conferences with heads of departments, foremen, and representatives of the employees. At these information is given as to the progress of the business, new schemes are explained, and suggestions and difficulties considered. Thus the help of the best brains in the establishment is enlisted, the interest of the workers secured, and important questions are viewed from many standpoints. In these and other ways Capital, Labour, and management are brought into alliance for the benefit of all.

Turning now to actual welfare work, it may be well to consider first what is done in the factory itself. The policy of building factories outside the great centres of population is more and more being adopted. There land is cheap, rates are low, and the buildings can be spread over ample space with full provision for fresh air and light.

This method receives its most striking illustration in the factory area of First Garden City, but the process is going forward in all directions.

In speaking of internal arrangements, it may be premised that while some of the reforms mentioned are to a certain extent required by the Factory Acts, the instances given represent something very much beyond the minimum of the Acts. Take, for example, the special arrangements made for removing and excluding dust, or extracting injurious effluvia caused by special processes. For this we find exhaust fans and overhanging funnels, so that the air in the room is kept comparatively pure.

In one factory there is an arrangement by which the whole of the air in some departments is changed several times each hour, 'the fresh air being filtered through a water screen, and in winter heated by steam.'

The subject of factory floors is one which has received a good deal of attention. The question of material is clearly fundamental. This must be largely governed by the nature of the industry; but besides this, there is the consideration of what is best for the workers. Some materials, for instance, are cold, and tend to produce rheumatism, others retain damp, while others wear quickly into ruts and ridges. All these points are now carefully looked at, every precaution is taken to drain damp from the floor, and boards are often provided for the workers to stand upon where concrete seems the only possible floor material. Further, there is the keeping of the floors clean, and here the boast of one factory may be referred to—that not only are the floors cleared and cleaned every night, but they are kept clean throughout the day, no spot or scrap being allowed to remain where it falls.

Following on this, reference may be made to the use of paint and whitewash. Most are familiar with the dingy walls, beams, and ceilings of certain factories; and it is only when a brightly painted well-kept room is entered that it is realized how great must be the effect on the worker of this added brightness, freshness, and colour. In pursuance of this idea, baskets of flowers are sometimes suspended in corridors and workrooms, while we read of one great spinning-room bright with climbing plants. The plan, too, of utilizing every scrap of spare or waste ground, within or around the factory, for the cultivation of flowers, is steadily on the increase.

Some employers are believers in the virtue of mottoes, and have them painted in conspicuous places. Thus, 'Do it now,' 'Take hold and lift,' 'He that can work is born king of something.'

The provision of adequate cloakrooms may be supposed to be a matter of course, but this is not the case, and this is one of the particulars where the care of the wise employer is shown. Sometimes a drying-room is provided, where wet clothes and boots can be left on entering, and found thoroughly dry when required on leaving. In the matter of sanitary arrangements and washing facilities the same difference is found. In some factories there is nothing beyond the necessary minimum; in others every convenience is offered. Thus we read of one factory with 'individual' washbasins, and another with a thousand of them distributed in different parts of the works. Shower baths and swimming baths are also provided, some of these being on a splendid scale.

The Factory Acts do a great deal for the safety of the worker by requiring the proper fencing of machinery. This is another instance, however, where much more is done in many factories than is required by a simple compliance with the law. In one, for example, there are seven surgeries and eight ambulance stations in different parts of the works, where first aid can be given at once. There are also 'accident committees,' whose duty it is to inquire into and report upon any serious personal accident, and to provide for periodical inspections of the machinery, hoists, and so forth.

In addition to injury by accident, workers, especially girls and women, are subject to sudden temporary indisposition, and in many instances rest rooms are provided for these cases. These rooms are in charge of a matron, and are comfortably and tastefully furnished. In some factories they are known as 'emergency rooms,' and are provided with beds and medical appliances.

The whole subject of the medical care of the workpeople has been claiming close attention for some time past. It is probable that the Insurance Act of 1911 may lead to modifications in existing arrangements, but a word may be said as to what has been done. In many factories one or more doctors with trained nurses give their whole time to caring for the health of the employees. In some a dentist is also employed. Where provision of this kind exists applicants for work are examined by the doctor before being engaged, and in departments where the work is regarded as being injurious there is a periodical examination. These medical departments allow of the keeping of complete vital statistics, and these bear eloquent testimony to a steady improvement in the standard of health as a result of the work of the departments. A most useful adjunct is the convalescent home. These homes have been established by certain firms, and employees are sent to them to hasten recovery or prevent a breakdown.

The question of providing facilities for meals is one of great importance, and much is being done in this direction. In many factories spacious and attractive dining-rooms have been built, where meals are supplied at a low tariff, or where food brought by the workers can be heated. In a few American factories meals are supplied free, but much the most usual arrangement is to make a small charge. In some the catering is worked at a loss, in others it is self-supporting.

In one factory there is a hall where dinners are supplied daily to 1,500 girls, and a second hall accommodating 800 men, who bring their food with them. This illustrates what is being done in many places.

Sometimes girls are allowed a few minutes for lunch in the morning, or for tea in the afternoon, the theory being that such an interval will be compensated for by better and quicker work.

Many other particulars might be given, such as the forewomen's sitting-room, the provision of overalls and hoods or caps, arrangements by which men and girls go to and leave work at different hours, the refusal of some firms to employ married women, morning prayers with the workpeople conducted by one of the principals; but what has been said must suffice under this particular head.

Sick benefit and pension schemes and savings funds all form part of the provision made for employees, but these would require an article to themselves, and cannot be more than mentioned. The same holds good of profit-sharing and co-partnership.

The principle of a minimum wage has been adopted in many instances, and care and thought have been devoted to assisting workers to earn and exceed it.

One firm points out how much can be done in this direction by kindly encouragement and advice. With a view to keeping a proper grip of the subject, returns showing individual earnings, numbers leaving in each department, and other particulars are presented to the directors periodically. These are carefully examined, and each individual is considered separately.

Turning now to other methods, perhaps the first place should be given to educational facilities. In some factories it is now made a condition of employment that young people applying for work shall not only have passed a certain school standard, but that they shall agree to attend, up to, say, eighteen years of age, a certain number of evening classes in accordance with the firm's educational scheme. In the case of girls this usually includes such subjects as hygiene, dressmaking, and cookery. With boys the evening classes are sometimes arranged so as to form a preparation and auxiliary to apprenticeship in one or other of the skilled trades in the works.

In one factory the youths showing most aptitude, whether apprentices or not, are given the opportunity of attending day classes, and, in special instances, a university or working-men's college, for a course of subjects.

Some employers have established primary, secondary, and technical schools for the workpeople and their children. Others have regular courses of classes and lectures for giving instruction in their processes of manufacture, business methods, and the position their products hold in the markets of the world. Libraries and reading-rooms are a natural and important adjunct to educational work, and much has been done through them to foster a love of reading. One firm has adopted the plan of placing wheeled stands, each containing a selection of 150 books, at the main entrances to the various departments, so that books may be obtained without even the trouble of going to the library.

Probably it is correct to include physical training under the general subject of education. A great deal is done in this direction. Splendid gymnasia and swimming baths are by no means uncommon adjuncts, and it is usual to make attendance at these during the firm's time compulsory upon the younger employees. Trained teachers are engaged to conduct the classes, so that drill, gymnastic exercises, and swimming are thus taught under the most favourable conditions.

Passing from education and kindred subjects, it is interesting to note how much is done to provide for recreation. Institutes or clubs with billiard and bagatelle tables, recreation and assembly rooms, concert halls, fields for cricket, football, and other games, allotment gardens, pleasure grounds, and rose gardens are all found in connection with one firm or another. Thus provided, the employees organize and maintain their various clubs, and these comprise choirs, bands, and associations of all kinds. Some firms arrange for all employees to have an annual holiday of a week or ten days, with pay in proportion to length of service.

Another institution which helps to bind the whole fabric together, and forms a vehicle for creating interest and spreading information, is the works magazine. A great deal of care is often expended on these magazines, and some of them reach a high standard. Some deal exclusively with the factory and the employees ; others cover a wider field, and include papers on travel, literature, and general subjects.

One matter of administration remains to be mentioned in which it is the public who are mainly interested. This is the question of the emission of smoke. In this respect certain manufacturers have set a very laudable example. To secure smokeless chimney-stacks is not a simple matter, and the experience of some firms indicates that it may not be a particularly cheap one. On the other hand, one firm claims to have achieved practical smokelessness at a saving, not a cost, of £25,000 a year. This firm emphasizes the importance of having a chemical staff in charge of questions of fuel.

The second section of the title of this paper introduces the subject of the housing of the workers. 'The Housing Question' is prominently before the public at present; but into the general problem it is not our business to enter. Our investigation must be limited to housing schemes associated with factories. The firm which has done most in this respect is that of Messrs. Krupp of the great steelworks at Essen. In 1855 boarding and lodging houses were built for unmarried men, and the first general housing scheme dates from 1870. Taking into account not only the houses at Essen but those at outlying works, the firm houses 12,800 men and families, or a total population of about 46,000. A large number of the dwellings are on the block system so common in Germany; but there are also cottage colonies as well, and in almost all cases trees and open spaces have been liberally provided.

The houses, whether tenements or cottages, are carefully designed and well equipped, and there are numerous public buildings, accommodating institutions of various kinds. The most attractive colony is Altenhof, where houses are given rent free to old and invalid workmen. It is built on the cottage system, the cottages containing one, two, or three dwellings of three rooms each. They are detached or semidetached, and stand in their own gardens. There are also three larger houses—two for widows, and one for widowers. In the middle of the village are convalescent homes, and there are two churches—one Protestant, the other Catholic. The land around is beautifully laid out, and well wooded. In the other colonies rents are charged in the ordinary course.

No other housing scheme equals this in magnitude, but there are others which possess features of interest of their own, and are well deserving of study. The best-known villages of the kind in England are Port Sunlight and Bournville, and as they represent different aims and methods, a short description may be given of each.

Port Sunlight is the creation of Mr. W. H. Lever, and was founded in 1888. It has been built for the workpeople at the great soap factory, and, with the exception of a very few houses, is entirely occupied by them and their families. The village is a form of what Mr. Lever describes as 'prosperity sharing.' Desiring to make his employees participators in the success of the business, and distrusting the ordinary methods of profit-sharing, he has built the village, and lets the houses to his workpeople at low rents. These rents are fixed to cover cost of repairs and maintenance, but do not give any return upon the capital of nearly half a million pounds sterling expended on the scheme.

Port Sunlight has been carefully planned, so that every advantage of space, fresh air, and sunshine may be secured. This, it may be noted once for all, is a characteristic of all recent 'model' villages, their founders having anticipated the Town Planning Act by many years. There are 720 houses, with a population of about 3,600. Each house has a front garden, which is kept in order by the estate gardening department. There are numerous allotments and a children's gardening scheme, so that ample opportunity is given for those desirous of cultivating the soil. House rents range from 3s. 6d. to 7s. 6d. per week, exclusive of rates. If rates are added, the figures are 5s. and 10s. respectively.

The cottages are conveniently planned, and vary in size and arrangement so as to suit different families. They are built in blocks of from two to seven houses, and great care and considerable expense have been devoted to the elevations, so as to make them varied and attractive. There are several public buildings—for instance, the church, schools, auditorium (used for theatrical performances, dancing, and entertainments of various kinds), the collegium (used for public meetings and classes, drilling, and dancing), the library and museum, hospital, gymnasium, and men's club.

There is also a comfortable inn. Formerly this was unlicensed, but, as the result of a vote of the inhabitants, a licence was applied for and granted in 1903. In the way of open spaces there are parks, bowling green, rifle range, and football ground. It will thus appear that Port Sunlight is in every way a most agreeable place of residence, presenting the strongest contrast imaginable to the dingy manufacturing suburbs which are only too familiar in the neighbourhood of our large towns.

Bournville differs from Port Sunlight in various ways. The chief points, however, are, first, that it is an experiment in general housing, and not a scheme for providing homes for the employees of one factory; and, second, that rents are fixed so as to yield a return on capital invested in the land and houses. Thus, although a large number of the workpeople at the Bournville Cocoa Factory live in the village, it is not reserved for them, and, as a matter of fact, more than half the householders work elsewhere. And although rents are kept as low as is compatible with securing a fair net return, they are commercial rents. The first Bournville houses were built in 1879, but the bulk of the work was done in 1894 and subsequently. The village owes its existence to Mr. George Cadbury, and was founded with the object of providing good homes in rural surroundings, with the opportunity of gardening, for 'the working-classes and labouring population in and around Birmingham and elsewhere in Great Britain.'

After laying out the village and erecting a considerable number of houses, Mr. Cadbury gave it, together with the estate of which it forms a part, to trustees for the nation. All private interest in capital and revenue was thus surrendered, and nothing can at any time revert to Mr. Cadbury or his heirs or representatives.

The scheme is thus cumulative. The net revenue received by the trustees is expended by them in the erection of more houses or the development or purchase of additional land, and so the property increases year by year at an accelerated pace. Some of the cottages have been sold on long leases, subject to an annual ground rent on the site, and to covenants securing the use of the property in harmony with the purpose of the founder. Most of the houses are, however, let on weekly tenancies in the usual way.

In addition to the original village, about 140 houses have been built by a copartnership society, known as the Bournville Tenants, Ltd., on 20 acres of land, leased from the Bournville trustees on a renewable 99 years' lease.

The total area of the estate is 612 acres, and, so far, about 140 have been developed for building. There are over 900 houses, with a population of about 4,400. The rents range from 4s. per week, or 4s. 9d., including rates, to 10s., or with rates, 12s. 6d. There are also a few houses of larger type.

The houses have gardens at the back and front, the area averaging about 500 square yards per house. The tenants are entirely responsible for these gardens, and cultivate them with great success. As the result of experiments, it is estimated that the net yield of an average Bournville garden is equivalent to 2s. per week throughout the year. The cottages are attractive in appearance and convenient in plan.

Standing well back from the tree-bordered roads, in their own gardens, they secure ample air and sunshine, and there are parks or open spaces within easy reach of every house. The public buildings are the schools, village meeting-house, Ruskin hall, and village inn. There is no licensed house in the village.

Bournville is exceedingly popular, the demand for houses being far in excess of the supply. That it is a success from a health standpoint is proved by the vital statistics. The averages for the last quinquennium were :—

Death-rate per 1000.

Bournville	5·7	England and Wales	14·6

Infantile Mortality per 1000 *Live Births.*

Bournville	62·4	England and Wales	117·4

These figures are representative of the experience of all 'Garden Villages,' and others might be added showing how great an advantage in height and weight the child of such a village has over the child of the slum. An interesting feature of Bournville life is the village council, a committee elected by the householders to further the interests of the village. This council accomplishes a great deal of valuable work, and shows by its labours how fully the residents appreciate their opportunities.

There are other villages in England which might well call for mention—New Earswick, near York; Woodlands, near Doncaster, notable as a model colliery village; and others—but the particulars given must suffice.

In America many factories have model villages attached to them. In some of these special facilities are given for purchasing not only the house but the freehold of the land also. In others the ownership is retained in the hands of the firm, and the men received as tenants. Probably the best known, though hardly the most successful of these, is Pullman, containing 1,550 houses, with church, schools, theatre, and library, In France, Holland, and other countries numerous model villages have also been built.

For success in such work as has been outlined in the foregoing pages, certain points are insisted upon by those who have most experience.

There must be no ground for the suspicion that welfare work is offered as a substitute for proper wages.

Paternalism and condescension must be avoided.

The interest and co-operation of the employees must be enlisted. Many schemes have failed because they were managed for, instead of by, the workers, or because of autocratic interference, or because they were not what the workers wanted, but what the firm thought they ought to want. What looks like ingratitude may really be independence, and the man who takes little interest in what he regards as a dole may heartily co-operate in organizing and administering schemes for the advantage of his fellows.

As to results, it seems obvious that it must pay to have healthy, contented workpeople, loyal to the firm, and interested in its success, who feel that they are receiving fair play, that their interests are considered, and their suggestions valued. It will, however, be best to hear the verdict of one or two who have tried welfare work, and can therefore speak with authority, and with these quotations this article must close.

Mr. J. C. van Marken, who has produced such a fine social organization among his employees at Agneta Park, near Delft, speaks of three stages in man's life: First, his demand for daily bread; second, his effort to ensure his daily bread; third, his attempt to achieve the beautifying of life. He adds: 'It seems to me the duty of the employer to aid his subordinates by every means at his command—his heart, his intellect, his money—to attain that highest stage which alone makes human life worth the living. My conviction is that in so doing the employer will make no sacrifices. But if he needs must make them—be it from the material or the moral point of view—let him make them up to the limits of his capacity. It is his sacred duty.' The welfare work at the famous National Cash Register Co.'s Factory has been described as 'The Five P's,' or, 'President Patterson's Plan of Paying Philanthropy.' We may demur to the style, but at least the implication of success is significant. It was President Patterson who described his factory as 'a 5,000 brain-power organization,' because he believes he has so far enlisted the interest of the workers that they are all thinking for the prosperity of the industry.

Mr. Budgett Meakin, in his book on this subject, cites many interesting opinions. From these we take the following:—The Reeves Engine Co., Trenton, New Jersey State: 'We can get a better grade of men, who are able to do finer work and more of it, by following this course. Our motto is: "Big wages, healthy conditions to work under, and big production."'

Mr. Weston of Newark says: 'It is interesting to note how frequently the health of employees and the requirements of business are best served by identical conditions.'

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Monopolies. See COMBINATIONS, INDUSTRIAL.

Mutual Thrift. See FRIENDLY SOCIETIES.

NEW LABOUR MOVEMENTS.

Syndicalism. | *Industrial Unionism.*
Industrial Syndicalism.

Under the names of 'Syndicalism' and 'Industrial Unionism' two new Labour movements have made their appearance in recent years. They arose independently, the first in France, the second in the United States; but both have been imported into Great Britain, where an attempt has been made to fuse them under the title of 'Industrial Syndicalism.' They are not identical, but have much in common, as will be seen from the following account of their origin and meaning.

Syndicalism.—This word is merely a label, and conveys no meaning in itself. It is an Anglicized version of the French word *syndicalisme*, a substantive formed from *syndical*, which means pertaining to a *syndic* or *syndicat*. These are general terms applied to any association of persons, including a Trade Union, the proper term for which is *Syndicat Ouvrier*. But as the Trade Union movement has developed and become prominent in France, it has tended to monopolize the words *syndicat* and *syndical*, and the substantive *syndicalisme* came naturally into use to designate this movement. Thus it means 'Trade Unionism,' very much as 'Unionism' is used to signify the same thing in England, though both have, properly speaking, a general application also. But *syndicalisme* is used in another and more particular sense, derived from the special attributes of the Trade Union movement in France, and it is this meaning alone which has been imported and embodied in the English word 'Syndicalism.' The use by French writers of *syndicalisme* in two senses, of which only one survives in the English version, is the source of confusion to some English writers, who contend that 'Syndicalism' only means Trade Unionism.

This etymology is not unimportant; it embodies and epitomizes the whole story. The appearance of the word *syndicalisme* in both its meanings signifies, first, the rise of organized labour into a factor of social importance; and secondly, its conscious emergence from the patronage and domination of political groups, and particularly of the Collective Socialists. Both the term and what it represents were hammered out at successive Labour Congresses between 1892 and 1902.

The modern development of Trade Unions in France only dates from 1884, when a law was passed authorizing their formation and legalizing their status. They had existed previously, but with limitations, and in a weak form. From 1884 onwards the Syndicats grew rapidly and progressively, and became a natural object of desire to political Socialists. There were several groups of these, representing different shades of opinion, and they fought, as usual, for the control of organized labour. The Collectivists, or Social Democrats, led by M. Guesde, gained the upper hand, and turned the Federation of Syndicats, established in 1886, into a political body in support of their party. But meantime a flank movement was proceeding in the ranks of organized labour, less accessible to political influence. Its instrument was the *Bourses du Travail.* Originally started in 1887 as Labour Exchanges, supported by public money but managed by Trade Unions, these institutions soon became the equivalent of our Trades Councils—that is, local combinations of all the Unions in a place, but with this important difference, that they are open to all workmen, whether organized or not. They developed rapidly, and in 1892 formed a federation of their own, distinct from the Federation of Syndicats. The unit of combination being locality, not trade, this form of organization was free from the sectional jealousy existing between different Unions, and proved a more powerful means of uniting workmen by the common bond of their interests as workmen. From the first it was led and inspired by men of Anarchistic leanings, opponents of Parliamentary action, and advocates of Labour organization for aggressive purposes; and the Federation of Bourses became the rallying-point for these elements and a school of pure aggressive Trade Unionism, in contradistinction to the Federation of Syndicats, which had fallen under political influences. In the struggle that ensued the former principles won, and thus *Syndicalisme* emerged as a distinctive Labour movement, independent of political groups.

Primarily the conflict was the old struggle between the Anarchist and the Collectivist principles, which had rent Socialism before, revived, but in a new form, and fought on the field of organized labour. What resulted was something different from either. It is more akin to Anarchism than to Collectivism, being intensely opposed to State control; but it differs from Anarchism in that it does not cover such wide ground, and does not aim at Communism. It is a Trade Union version of the economic revolution or overthrow of the existing economic order, which is the common aim of all forms of active Socialism, to use that word in its original and proper sense. All desire to abolish the existing system of private ownership, but they differ in regard to what should replace it.

Collectivists would substitute State ownership or organized common ownership; Anarchists would have unorganized common ownership; Syndicalists would have industrial group ownership. Put in another way, Collectivists would make the economic organization of society political; Syndicalists look only to economic organization, and would merge the political in it; while Anarchists would have no organization at all except such as might spontaneously arise.

The difference between Trade Unionism and Syndicalism is clear. The latter is the former applied to a revolutionary purpose. This turn is congenial to the French nature, and it follows logically on the doctrine of the class war taught by Socialism to wage-earners. ‘You produce everything, and ought to own the whole product,’ says Socialism. ‘Then let us take it,’ is the natural response of Syndicalism; ‘let us seize the instruments of production, and operate them ourselves.’ (Of course, for the benefit of all; that is the professed aim of all programmes.) The proposal is to accomplish the economic revolution by the ‘direct action’ of organized labour in place of the indirect process of political representation, and instead of entrusting future control to the State, to throw off the shackles of all authority, and make the Syndicat the unit of organization in the new order. That is the distinctive purpose of *Syndicalisme.* The claim is made, with some reason, that it is the most complete and the only pure expression of the class war. Hence the indifference to Parliamentary action and the revolt against the State, which is its most significant feature. The State under every form of government is found always upholding the existing order, and presenting the greatest obstacle to the accomplishment of the class war and the aspirations of the ‘proletariate.’ It is sufficiently oppressive already in the exercise of political control, argue the Syndicalists. If it wielded economic control also we should be absolute slaves; we must effect our own emancipation.

The revolution is to be ushered in by the general strike, which thus acquires a new and wider significance. It is regarded not as a mere instrument for wringing better terms from employers, but as a national catastrophe evoking disorder, under cover of which the revolution is to be accomplished. The new order is to emerge from the turmoil. It is recognized that the ultimate power wielded by authority in the shape of military force is a fatal obstacle. Hence the necessity of anti-militarism, which forms an integral part of the policy. It goes with anti-patriotism, based on the theory that the interest of wage-earners, which alone is recognized by the class war, knows no national boundaries.

Such is the aim of *Syndicalisme* proper, but it must not be supposed that all Syndicalists hold these views in their entirety. There are the usual shades of opinion among them, and the doctrine is constantly undergoing modification. Much less is it held by the whole of organized labour in France. It is the creed of the most advanced and militant section represented by the *Confédération Générale du Travail*. This organization was first formed in 1895 by the union of the two federations, after the repulse of the politicians and the formal adoption of the general strike; but its Constitution was loose, and no real fusion of the syndical forces took place until 1902, when the organization was placed on a firm basis. It consists of two equal sections, the one representing the members as organized by trades or industries (*Fédérations d'Industrie, de Métier et des Syndicats*); the other representing them as organized in local groups (*Fédération des Bourses du Travail*). Each has its own officers and its own functions: the first is entrusted with the active work, which means strikes; the second with propaganda and organization. But the two act together, meet regularly, and form a joint council. A Congress is held every two years. The official organ is the *Voix du Peuple*, a weekly paper. The total membership is not accurately known, but at the last Congress in 1912 the number was stated to be about 400,000. It has grown rapidly in recent years, having been only 158,000 in 1904.

The energies of the *Confédération* are devoted chiefly to fostering Trade Unions, preparing, fomenting, and prolonging strikes, and to seducing the army. The general strike has receded into the background as a practical thing, and it is not favoured by the more moderate section of the *Confédération*, which is, of course, divided into two parties. But pending more propitious times, they can unite in encouraging ordinary strikes, which are regarded as practice, and *sabotage*, which means any injury inflicted on employers, whether by bad work, injury to plant, or otherwise. The *Confédération* is very active and successful in promoting both. Its greatest effort, so far, was the general railway strike in 1910, which exhibited a dangerous spirit, and was only suppressed by military measures. The Post Office strike of the previous year was not organized by the *Confédération*, but was nevertheless inspired by *Syndicalisme*, which has infected nearly all branches of the huge French Civil Service. It constitutes a serious menace to the State, though the economic revolution is only a dream.

Syndicalisme has been transplanted into other Continental countries, but has not as yet become formidable anywhere but in Italy, where the industrial development and the tendency to Anarchism combine to provide a favourable soil.

Industrial Unionism.—This parallel movement in the United States dates from 1896, when a revolutionary labour organization was formed under the title of the 'Socialist Trade and Labour Alliance.' In 1905 it was merged with other kindred bodies in the 'United Workers of the World,' which represents the principles of Industrial Unionism, as gradually shaped and formulated in the previous years. The movement rests on the same underlying forces as *Syndicalisme*, but it has taken a somewhat different shape, because the conditions are different in the United States. It embodies a Trade Union reading of Socialist doctrines, and represents a revolt, but not against political

Socialism, which is weak in America, so much as against the old Trade Unionism, which is strong; whereas in France these conditions are reversed. It is based theoretically on the class war and the right of Labour to the whole product, and it aims at an economic revolution, to be accomplished by organized Labour, which will afterwards administer the means of production. But it does not disdain political action or rely on the general strike. Its complaint against the other Socialists is that they are feeble and half-hearted; but its chief quarrel is with unrevolutionary Trade Unionism, and its first concern is to build up a new organization on different lines, by industries instead of by crafts—thus uniting all workers engaged in a common branch of occupation as a first step, and then federating them nationally and internationally. Hence its title. Pending the revolution, the function of Industrial Unionism is to organize labour on the lines indicated, and to attack capital in every way, both by strikes and *sabotage*. Its actual operations are, in fact, identical with those of *Syndicalisme*, and it similarly attracts the more violent elements which incline towards Anarchism. What hold it has on organized Labour in America cannot be estimated with any precision. It is strongest among miners and railwaymen, having been started by some of their leaders; but it has more recently made way among the textile workers of New England, and has been responsible for extensive and determined strikes in Massachusetts. Its chief significance, however, lies in its opposition to the older Unionism represented by the American Federation of Labour, and in its influence as a driving force towards energetic and disorderly action. It was not directly responsible for the Macnamara and other Anarchist outrages, which were the work of older Unions affiliated to the Federation; but its rival propaganda has indirectly stimulated the latter.

Industrial Syndicalism.—As already indicated, this term is derived jointly from the French and American movements described, and represents an attempt to unite their principles in a new propaganda carried on in Great Britain. It made its appearance in 1910 with the publication of a monthly pamphlet, called the *Industrial Syndicalist*, conducted by Mr. Tom Mann; but the ground had been prepared by the teaching of American propagandists from the United Workers of the World, and previously to that by an organization called the Socialist Labour Party, established in Edinburgh so far back as 1902, and professing similar tenets, though less developed on the Trade Union side. A pamphlet on *Revolutionary Unionism*, issued in 1909 by a Huddersfield gasworker, marks the development of the doctrine; but the word 'Syndicalism' seems to have been unknown before 1910.

In the autumn of that year an organization was formed at Manchester called the 'Industrial Syndicalist Education League;' it issues an official monthly organ called the *Syndicalist*, of which the first number appeared in January 1912. It describes Syndicalism as 'revolutionary Trade Unionism,' the immediate purpose of which is 'to conduct a scientific class war against Capitalism,' and its ultimate aim 'the capture of the industrial system, and its management by the workers themselves for the benefit of the whole community.' This is identical with the French conception, but the British Syndicalists also adopt the American idea, which is not needed in France, of more thorough organization by industries instead of by trades as a preliminary step. In tactics, however, they differ. They openly attack neither political action, like the French, nor the old Trade Unionism, like the Americans. They believe in neither, but seek to supersede both by conversion, not by fighting.

There is great attraction in their arguments at the present juncture, when disappointment is rife with the results alike of the old Trade Unionism and of political Socialism; and the influence of the propaganda has been manifested in the Transport Workers' Federation, a new body formed on the principles of Industrial Unionism, in the linked strikes of 1911, and in the disorder and *sabotage* displayed both then and among Welsh miners in the previous year. The movement seemed to be advancing rapidly in 1911, though it was confined to sections of transport workers and of miners, among whom a special and active propaganda in the new principles had been carried on. But subsequent events have given it a set-back. In the great coal strike of 1912 the Syndicalist element was virtually suppressed; but the subsequent strike in the Port of London resulted in a still heavier blow. It was an example of the Industrial Unionism which had been so successful in 1911, but it completely failed. The response in London was very half-hearted, and two attempts to extend the strike to other ports ended in derisory failure. Nevertheless the movement has life in it still, and students of sociology will do well to keep an eye on it. The efforts made by Labour politicians and Socialists to prove that it is negligible show that they do not think so. When men really think a thing negligible they neglect it. A. S.

Osborne Case, The. See TRADE UNIONS.

Outworkers. See FACTORY LAW.

Outworkers, Female. See WOMEN AND CHILDREN AND THE LABOUR MARKET.

PHYSICAL CONDITIONS OF THE WORKING CLASSES, AND SCHEMES FOR DEVELOPMENT.

1. *Infancy.*
2. *Childhood and School Age.*
3. *Adolescence.*
4. *Working Period, or Period of Employment.*
5. *General Conclusions.*
6. *Bibliography.*

That every child born has a right to live is a doctrine with which all must agree; and what applies to children generally applies with greater force to industrial children, or children of the working classes, who form the majority of the population of the United Kingdom. How can this doctrine best be put into practice? It is all a matter of environment; and it will be convenient to trace the factors (for good or bad) connected with the special environment of the industrial or working-class child in its development from infancy, through childhood and school age, to adolescence, and working period (or period of employment).

1. **Infancy.**—The ravages of infantile mortality, leading to the terrible waste of infant life, are expressed in different ways statistically. Simply, it may be stated that in England and Wales about 130,000 infants, and in London about 20,000 infants, are born every year to die before they are one year old. In industrial and working-class centres this infantile mortality is appalling—for example, potteries, mines, textile industries, etc.—and even in country and agricultural districts the mortality is too high, although, of course, lower than in congested and crowded centres. In countries

outside the United Kingdom the same variations are noted—for example, low mortality in Northern Europe, Denmark, Norway, and Sweden—that is, agricultural and rural or sparsely populated districts; and high mortality in Mid and Southern Europe and Russia—that is, working-class and industrial or congested centres. Statistics everywhere show that, whereas the general and zymotic death-rates amongst the general populations (at all ages) have decreased as the result of sanitary and administrative measures, the infantile mortality rates stand practically where they did a century ago. What applies to mortality applies also to morbidity, the two running *pari passu.* Something must be done, more than has yet been done, to cope with the evil, which is a disgrace to civilization. Preventive measures are comparatively simple, and may be summed up in the words—' the proper and regular feeding of infants' —that is, natural (or breast) feeding in the early months, to be followed by artificial (or hand) feeding afterwards. Proper care and management are also needed as to the infant's washing, clothing, regularity of habits, etc. The rising mothers must be educated as girls at school in the duties of motherhood, and in the proper feeding and management of babies, and general home management; whilst health and education authorities must provide qualified health visitors, or other officials, to help in the same way. Many societies and associations are working at the subject, and their energies are usually concentrated on (*a*) the mother, or (*b*) the child. Both methods are useful; indeed, the mother and the child must be considered together. 'Schools for mothers' will not take the place of 'milk depots,' nor will 'milk depots' dispense with the need for legislative measures, directed (*a*) to limit the employment of *pregnant* women in workshops and factories; (*b*) to render compulsory, within thirty-six hours, the notification of all births; (*c*) to protect infant life;

(*d*) to secure an efficient service of midwives, etc. The ideal is for the mother to stay at home to attend to her infant, but under existing industrial conditions such an ideal is not attainable. Women must work to supplement the family earnings, when the breadwinner is not earning enough, and to assist, or take the place of, the breadwinner on emergency (accident, illness, non-employment, casual labour, drunkenness, etc.).

A falling birth-rate complicates the question of infantile mortality, and makes it of national importance —for example, in France, Belgium, and other countries. Thus, France has her 'ligue française centre la mortalité infantile,' her 'pouponnière de Versailles,' her 'consultations de nourrissons,' her 'gouttes de lait,' her 'restaurants gratuits,' etc.; and Belgium her 'ligue Nationale Belge pour la protection de l'enfance du premier an,' her 'crèches industrielles,' her 'école de puericulture,' and her 'consultations de nourrissons,' etc. Other countries are beginning to move on similar lines—for example, Hungary, Spain, Germany, Switzerland, Sweden, Brazil, and the United States, but the United Kingdom lags behind.

Though specially great in connection with the 'infant' (that is, under twelve months), there is also a large mortality amongst children between one and five years, as shown by the fact that, of every 1,000,000 infants born, 53,000 die between one and five years of life in the United Kingdom.

2. **Childhood and School Age.**—These periods are best treated together. The problem is complicated in that no one is responsible, though many are the competing and overlapping authorities. The result is that the child suffers. The case of pauper and destitute children is particularly hard. Outdoor relief, as at present administered to them under the Poor Law, tends to cause definite and serious deterioration of health and of character, and worse may be said of their indoor

relief, the taint of pauperism tending to affect, slowly but surely, their souls. Pauper children must be removed from the Poor Law. There is also a large amount of unseen and unknown (at least officially) child destitution and child hunger to be found almost everywhere outside the branded 'pauper' class, and to this attention must be paid at the same time that parental destitution and poverty are being attacked. Children must be made healthy at all costs, and the State must begin by insuring children against disease. Medical inspection and treatment are needed, systematically carried out. In the case of school children, power is given by a single section (s. 13) of the Education (Administrative Provisions) Act, 1907, for their compulsory medical inspection, and the establishment of a school medical service has become in consequence a *sine quâ non*, such service to be in co-relationship with that of public health, so as to secure an intimate association between home and school influences. Strange to say, though medical inspection is compulsory, the subsequent and consequent treatment is optional. Fortunately this optional power is being used, and 'clinics' (or other arrangements) are forthcoming—have, in a few instances, already come—for example, Bradford Municipal 'Clinic' (general diseases), Cambridge Municipal 'Clinic' (teeth), etc. Much still remains to be done, either by the systematic use of existing agencies (hospitals, dispensaries, etc.), or by the systematic establishment of municipal 'clinics.' One thing is certain—namely, that medical inspection and treatment of school children must go hand in hand, be worked together, and unified under one controlling authority. School meals for destitute and underfed children and school bathing and cleansing for dirty and neglected children are important matters to be included under the heading 'treatment.' Statistics are fast accumulating which prove the necessity for systematic inspection and efficient treatment. Taking only such diseases as affect the organs which are absolutely necessary for education—that is, eyes, ears, throat, and teeth—the statistics are startling. Thus, of 6,000,000 children in the public elementary schools of England and Wales, it is stated that 10 per cent. show defective eyes, 3 to 5 per cent. defective ears, 8 per cent. defective throats, and 20 to 40 per cent. defective teeth. Further, 40 per cent. show unclean heads (1 per cent. actually suffering from ringworm), whilst 2 to 5 per cent. are found to be 'underfed' or 'ill-fed.' To obtain full advantage from education, 'underfed' or 'ill-fed' children must be fed by the State at the time that they are being educated, whether the matter be regarded from an economical or a moral standpoint. Power is given for this by the Education (Provision of Meals) Act, 1906, whereby school canteens may be established, and canteen committees appointed. This power again is, unfortunately, optional, but voluntary organizations are filling up the gaps, meanwhile, more or less successfully. The Children Act, 1908, deals with dirty and neglected children. In all schemes of medical inspection, treatment, feeding, etc., *all* school children must be included—for example, those in orphanage schools, Poor Law institutions, reformatory and industrial schools, etc. Army school children, in the garrison and detachment schools, already obtain all the benefits of inspection and treatment. Special schools, too, are coming into use—for example, (*a*) open air, (*b*) for deaf and dumb and blind children, (*c*) for mentally defective children (weakness of intellect and feeble-mindedness), (*d*) for cripples, etc. The value of (*a*) open-air schools has been proved by the pioneers of the movement, Drs. Bendix and Neufert of Charlottenburg, near Berlin, where the first open-air school was established in 1904, dull and backward children becoming mentally brighter and morally improved, especially when their mental state is due to physical defects—for example, malnutrition, anæmia and general delicacy from whatever causes, early tuberculosis, sleeplessness, convalescence after fevers, scrofula, heart and lung troubles, etc. The first English open-air school was opened by the London County Council in Borstall Wood, Woolwich, in 1906. With regard to (*b*), (*c*), and (*d*)—schools for deaf, dumb, blind, mentally defective, and cripple children—their need cannot be gainsaid, and powers for establishing them are given in the Elementary Education (Blind and Deaf Children) Act, 1893, and the Elementary Education (Defective and Epileptic Children) Act, 1899—both, unfortunately, optional Acts.

The object of these special schools is to provide an educational curriculum best suited to the mental and physical states of the scholars. In this way, the maximum amount of good is obtained. Equally necessary with the inspection and treatment of the school children are the inspection and supervision of the school buildings and furniture, so as to secure a sanitary and proper environment. Structure, site, surroundings, ventilation, warming, lighting, water supply, drainage, and cleanliness of the school buildings and furniture all need attention.

What of the expenditure necessary? In the words of Sir Lauder Brunton, 'It is a deal cheaper to spend pence on children than pounds on paupers.' The *individual* child must be standardized to a state of physical and mental efficiency; the *average* child (based on statistics) must be a thing of the past. The State must step in *in loco parentis* if necessary.

3. **Adolescence.**—After school age another difficulty appears. Of the total children leaving elementary schools, 70 to 80 per cent. go into casual employment, or, rather, are driven into it, there being no alternative. Necessity drives them into what are called

'blind-alley' occupations, thereby swelling the ranks of the unskilled, casual labour class. What is the remedy? To raise the school age; to restrict boy and girl labour by prohibiting boys below seventeen and girls below eighteen years of age from being employed in street trading; to make compulsory secondary education; to restrict and control juvenile and half-time labour; to introduce a national scheme of industrial training of juveniles and a social organization of adolescence in the form of continuation and evening schools, technical institutions, working colonies, etc. Co-operation is required between education authorities and care committees and juvenile advisory boards, working through the Labour Exchanges established under the Labour Exchanges Act, 1909. This age period of adolescence is especially important, having regard to the coming workers of the country, and the necessity for their proper industrial equipment for the future competition in the labour world. What is wanted is proper State provision and State control to ensure the school supervision being continued into adolescence.

4. **Working Period or Period of Employment.**—In dealing with this age period, attention is naturally directed to the new Insurance Act. (See INSURANCE.)

Excellent as the 'benefits' are, the Act applies only to normally healthy and normally employed men and women, and makes no provision for the ill and chronically unemployed, the casuals, the odd-jobbers, the mentally deficient, the so-called 'non-combatants' of industry (that is, women, children, and infants who are dependent upon others), non-wage-earning women, and all persons under sixteen years of age. Again, difficulties will arise in connection with (1) the smallness of the amounts of 'benefits,' whether sickness or disablement; (2) benefit members, both 'approved' and deposit (or post office), who are out of benefit, or whose credit is exhausted, on account of irregular wages or other causes ; (3) the large class of bad lives—that is, those refused by trade unions, friendly societies, and insurance companies ; and (4) the deposit or post-office contributors, whose ‘ benefits ’ are limited to the amounts standing to their credit.

For carrying out the Act, Insurance Commissioners and Local Insurance Committees have been appointed, the functions of the latter being wide—namely (1) dispensing all medical and sanatorium benefits for both ‘ approved ’ and ‘ deposit ’ contributors ; (2) dispensing sickness and disablement and maternity benefits for ‘deposit’ contributors ; (3) furnishing reports on health of insured persons, and taking proceedings against those responsible for excessive sickness rates, due to bad housing, bad water supply, bad factory and workshop conditions, etc. ; (4) arranging for lectures on health, etc. These functions are mainly preventive in nature ; and it is important, therefore, that there should be agreement and harmony amongst the different representatives elected on the committees, leading to concerted action of all voluntary and official forces. Without such harmonious co-operation, harm may be done, and the establishment of a unified preventive medical service, which must come eventually, be indefinitely postponed.

It cannot be claimed that, in any sense, the Insurance Act is a final solution of the problem of sickness. Good is expected to accrue, however, from the Act as it at present stands, in so far as general insurances of the workers during sickness are concerned, more especially in connection with pulmonary tuberculosis (consumption) and the sanatorium ‘ benefit.’ The financial loss to the nation from this disease alone is about ten millions sterling annually from deaths, and to this large sum must be added another large one, to cover the loss from protracted periods of sickness and disablement which occur prior to death, and which are estimated in duration at from two to three years for each death registered. In addition to these monetary losses, there are the losses in efficiency. The most effective measures of prevention and eradication are called for, and would not cost a fractional part of the total monetary loss at present caused by the disease. Encouragement in this direction comes from Germany, where experience seems to prove that insurance and friendly societies can be made to play an important part in battling against tuberculosis by insurance against sickness and death. Sick pay and disablement pay enable the members of the societies to avail themselves of proper treatment (including *early* sanatorium treatment), and their families, or dependants, to be provided with food, etc., during the breadwinners' absences. The same will now apply to the workers of the United Kingdom under the Insurance Act, a total of about fourteen millions belonging to insurance and friendly societies, and between one and two millions to trade unions, slate clubs, etc. Credit is due, and should be given, to insurance and friendly societies, which have already helped in the crusade against consumption—the former indirectly by eliminating consumptives from their rolls, and the latter directly by giving sickness and burial benefits to members attacked with that disease. Sight, too, must not be lost of the good work that has already been accomplished in lessening the amount of consumption by general and special administrative measures, put into force by sanitary authorities. Indeed, a broad view of the question is necessary, as there are many aspects of the problem, and the disease is of vast extent. All available means at disposal must be utilized, each factor being important in conjunction with others, all to be welded into one effective organization. In such a broad scheme everything plays a part—compulsory notification, sanatoria, anti-tuberculosis dispensaries, institutional and domiciliary treatment (both preventive and curative), tuberculin dispensaries, insurance and friendly societies, etc.; whilst, in addition, general administrative sanitary measures must be energetically continued, with a view to still further improving the environment and health of the people.

Industrial workers are specially liable to the disease, one-fourth of the total deaths (males) between the ages of twenty-five and fifty-five years being due to it. They are attacked in the prime of their working lives, their earning capacity is limited, and poverty and destitution result. Certain trades suffer out of all proportion, the nature of the work rendering the lung tissue especially prone to invasion by the germ of consumption—for example, cutlers, scissors-makers, file-makers, and tin and lead and copper miners—giving rise to what is known as 'industrial consumption.'

There are other diseases besides consumption that seriously affect the workers, and they are known as 'industrial diseases'—for example, antimony, arsenic, lead, mercury, and phosphorus poisoning, connected with trades using such metals; bisulphide of carbon poisoning in rubber factories; 'caisson' disease amongst tunnel workers; miners' nystagmus (oscillation of the eyes); anthrax in wool-sorting workplaces; diseases and deaths due to electric shocks in electrical works; noxious vapours from noxious trades; etc. These dangerous trades and diseases of occupation have been carefully studied, and precautionary measures are taken now, with the result that influences against health are being reduced to a minimum. In this respect the Factory and Workshops Acts, the Workmen's Compensation Act, etc., have helped materially by the Government supervision that they have afforded, and by the extra care that has been exercised by employers and employees to minimise these special dangers to health. The Factory and Workshops Acts have also done much for the health and improvement generally of the workers, by ensuring cleanly conditions of work and sanitary surroundings, and precautions against overcrowding, excessive hours of employment, accidents from machinery, etc. Insanitary and unhealthy surroundings of the workers, whilst at work, must be taken into account when forming an opinion of their health and physical condition. Much has been done by general sanitary measures in this connection. Conditions of labour and rates of wages paid also have an indirect bearing on the subject—for example, outworkers and homeworkers connected with many trades (tailoring, dressmaking, artificial flower-making, chain and nail-making, hook-and-eye and button carding, glove-making, sack sewing and repairing, wood chopping, match-boxing, etc.), the 'sweated' industries, as exposed by the Select Committee of the House of Lords, known as the 'Earl of Dunraven Committee' (appointed in 1890). The details given of the sweating were harrowing, not only the nature of the work and the conditions under which it was carried out, but also the miserably low wages paid, calling for the obvious remedies of a wages board (to raise wages), compulsory registration (to secure sanitary workplaces), and systematic supervision (to prevent excessive hours of labour), etc. At present there is no union, no organization of sweated outworkers, and no proper State protection. The health of the workers suffers in consequence, and, to make matters worse, the workers themselves, on account of the smallness of the wages, are drawn from many sources, every available human being in a household being brought in as a wage-earner—the aged, the very young, children, half-witted persons, cripples, etc. Pale faces, stunted frames, flat chests, and round shoulders result. General mortality rates vary considerably amongst various classes of occupation (industrial and others)—for example, taking 1,000 as the mortality figure for *all* males, there are variations amongst different occupations, varying within such wide limits as 500 and 550 for clergymen and gardeners, to 2,150 and 2,250 for tin miners and general labourers respectively. So, too, the mortality rates from special diseases vary amongst different classes of workers. Before leaving the working period, or period of employment, reference must be made to Poor Law Administration and the need for its reform, in view of the newly passed Insurance Act. At least the points upon which the Majority and Minority Reports of the Poor Law Commission agree might be adopted—namely (1) abolition of Boards of Guardians, and the present disfranchisement and disgrace which are at present inseparable from pauperism; (2) abolition of mixed workhouses, and the provision of separate institutions for the aged; (3) reorganization of the whole system of outdoor relief (including medical relief), so as to make it adequate and non-deterrent; (4) provision of curative and preventive treatment for the able-bodied; (5) removal from Poor Law Administration of the treatment and care of the mentally defective; etc. Such much-needed reforms for the workers would carry with them an equally needed reform for the infants and children—namely, their removal from residence in the workhouses as at present.

5. **General Conclusions.**—General rates of mortality (with special reference to infantile mortality), death-rates from the principal forms of disease, and amongst the various classes of occupations, are valuable indexes of the results of all social work and municipal and private enterprise, and point, according as such rates decrease or increase, to the value or otherwise of the steps that are being taken to prevent insanitation and overcrowding, to counteract dangerous conditions of work, to abolish unhealthy areas and all slums (with the provision of rehousing schemes in proper and suitable houses), and, generally, to improve the environ-

ments of all. The Public Health Service (central and local) has done, and is still doing, good work, as shown by results achieved; but much more remains to be done. Morbidity statistics must be considered *pari passu* with mortality statistics, which in the past have monopolized most, if not all, of the attention of statisticians and health officers. Unification and consolidation (with amendments) of all existing authorities, public or municipal and private or voluntary, are urgently needed. Public health, education, Poor Law, local insurance, voluntary hospitals, dispensaries, care committees, country holiday funds, health societies, gilds of social welfare, advisory committees (juvenile and other), garden cities and town-planning associations, invalid aid societies, Society for the Prevention of Cruelty to Children, schools for mothers, day nurseries, milk depots, etc., must, one and all, go to form an enlarged and unified Public Health Service, fully organized and equipped, and working in intimate relationship with voluntary agencies. Such is the ideal, whereby overlapping and waste of energy (and money) will be avoided. Specially is it desirable that the Poor Law, as at present existing, should be abolished, and its deterrent effects, due to disfranchisement and disgrace, removed. What remains to be done is to crystallize all previous existing efforts that have grown up gradually as the result of experience gained during the onward march of civilization. Such crystallization must come, and with it a greater happiness and health for the workers of the world. Ill-health, misery, destitution, and unemployment are preventable. To take only one example. The statistics of pauperism and consumption rise and fall together, showing their intimate and close interrelationship. Poverty predisposes to consumption, and consumption to poverty, and so the vicious circle is maintained. Nine per cent. of the total pauperism is due directly to consumption, and fourteen per cent.

of the total Poor Law expenses to the same disease. Lastly, one in every three of the Poor Law deaths is due to consumption.

Pauperism or destitution undoubtedly exists to a much greater extent than many imagine, and is a distinct menace to society. The adult pauper is past cure; he is a degenerate. The best results will be obtained from attacking the pauper child, and the first stage in the attack is to remove it from the influence of the Poor Law. It may then be left to be dealt with through the usual channels, like other children. The lower stratum of society must be raised, and, as illness and disease disappear, so will poverty, pauperism, and destitution. The National Conference on the Prevention of Destitution met in 1911, and again in 1912, and it is anticipated that their labours will bear fruit, in the way of co-ordinating all administrative measures, with a view to striking at the root-causes of destitution, by inaugurating a wholesale preventive system, in which all existing administrations (official, semi-official, and voluntary) will be placed under the health departments of sanitary authorities.

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Pieceworkers. See FACTORY LAW.

Politics. See LABOUR AND POLITICS.

Polytechnics. See EDUCATION, INDUSTRIAL.

Pools. See COMBINATIONS, INDUSTRIAL.

Poor Law Report, The. See UNEMPLOYMENT.

Population and Industrialism. See INDUSTRIALISM, HISTORY OF.

Price Associations. See COMBINATIONS, INDUSTRIAL.

Production, Means of. See CAPITAL.

Profit. See CAPITAL.

Profit-sharing. See COPARTNERSHIP, LABOUR.

Quarries. See FACTORY LAW.

Reformatories. See FACTORY LAW.

Rest Rooms. See MODEL FACTORIES AND VILLAGES.

Revolution, The Industrial. See INDUSTRIALISM, HISTORY OF.

Sales Associations. See COMBINATIONS, INDUSTRIAL.

Schools. See EDUCATION, INDUSTRIAL.

Schools, Evening. See EDUCATION, INDUSTRIAL.

Schools of Art. See EDUCATION, INDUSTRIAL.

Schools of Science. See Education, Industrial.

Schools, Trade. See Education, Industrial.

Science and Industry. See Industrialism, History of.

Seasonable Trades. See Labour Exchanges; Unemployment.

Shop Acts. See Factory Law.

Shop Clubs. See Factory Law; Friendly Societies.

Small Holdings. See Emigration.

Socialism. See Labour and Politics.

Solidarity of Labour. See Strikes.

Statistics, Industrial. See Measurement of Industrial Changes; Cost of Living.

Steam Power. See Industrialism, History of.

Strike, General. See New Labour Movements.

STRIKES.

1. *History.*
2. *Question of Principle: the 'Right to Strike.'*
3. *Economic Causes.*
4. *Value of Strikes: 'Sellers' Monopoly Price for Labour.'*
5. *Strikes against Buyers' Monopoly Price for Labour.*
6. *Regulation of Strikes.*
7. *Bibliography.*

A full examination of strikes would involve legal and ethical questions, as well as those more properly classed as economic. Under present conditions, however, the economic aspects of the subject are of most interest.

1. History.—Concerted movements of Labour analogous to strikes are found in ancient times and in the mediæval period, but strikes in the modern acceptation of the term may be said to begin with the rise of Capitalism, and the differentiation between Capital and Labour, in the eighteenth century. By the middle of that century the organizations of Labour in England had become so powerful that they were forbidden by proclamation and by definite legislation. Combinations for the unreasonable advancement of wages in the woollen manufactures were made illegal by 12 Geo. I. c. 34. In 1754, at Norwich, three hundred wool-weavers retreated to a hill three miles off, built huts, and stayed six weeks there, supported by the contributions of their fellow-workmen. At first the power of the law was used in favour of the masters as against the men, and various incidents and methods connected with strikes were brought under the criminal law as involving conspiracy, intimidation, molestation, or obstruction. The decision in 1872 in the gas-stokers' case, that a strike might in some cases amount to a conspiracy at common law, led to the passing of 38 and 39 Vic. c. 86, which enacted that an agreement by two or more persons in furtherance of a trade dispute should not be indictable as a conspiracy if such act committed by one person should not be punishable as a crime. Subsequent legislation in the United Kingdom has been favourable to strikers, especially as regards the interpretation of peaceful persuasion and the non-liability of Union funds for damages arising out of the organization of strikes and breach of contracts. (See TRADE UNIONS, LAW OF.)

In the British dominions the law is less favourable to strikes, especially if undertaken without previous reference of the dispute to conciliation or arbitration. Recent strikes in the United Kingdom (railways, coal, etc.) have directed public attention to the privileges conferred by the Trade Disputes Act of 1906 (see TRADE UNIONS); while the development of the doctrines of Syndicalism abroad (see NEW LABOUR MOVEMENTS) has brought into active controversy the first principles of the relations of Labour and Capital to one another and to the State. As is common with economic conceptions, Syndicalism illustrates the principle of continuity, passing from the simple forms of co-operation or profit-sharing to what would be, if effectively carried out, a complete industrial revolution. Similarly, the term 'strike' is applied to any simple agreement for the cessation of work in some particular branch of industry for some very definite object, such as a particular rise in wages, and it is applied also to the sympathetic cessation of work which, as recent experience shows, may affect directly or indirectly all the industries in a country. It is obvious that at present the interests of third parties are often of much more concern than the interests of those immediately engaged in a strike (or lock-out). In a strike affecting public utilities, it is clear that the profit and loss to the parties directly concerned is of relatively minor importance. It follows that any amendment of the law should be directed more to the protection of public interests than to the distribution of justice as between particular groups of employers and employed.

2. **Question of Principle: the 'Right to Strike.'**—With regard to the morality of strikes, as with the law, we are thrown back on first principles; and a re-examination is necessary in the light of modern economic conditions. In discussing the morality of strikes, there seems to be no common-sense agreement as to whether the ultimate test ought to be the maximum liberty of individuals, or the maximum satisfaction of all concerned (the greatest happiness of the greatest number). In the recent (1912) coal strike in the United Kingdom the dominant idea seemed to be that there should be no interference with the disputants, but that they should be left to fight out their own battle in their own way, and that the State should undertake the minimum of interference.

This recrudescence of the principle of non-interference in an extreme and almost superstitious form is very remarkable in the light of the excessive applications of the rival principle of maximum social welfare in other directions. The two rival principles (liberty and utility or happiness) may no doubt, in some cases, be easily reconciled. It is noteworthy that Beccaria, who was the first to apply both principles in a form intelligible to common thought, apparently considered that the best way to attain the greatest happiness of the greatest number (he is the author of the term) was to aim at the minimum of control of the liberty of individuals. His *Treatise on Crimes and Punishments* (1764), which in bulk is little more than a pamphlet, probably did more than all other books together for the amendment throughout the civilized world of the savagery and superstition of the old criminal law. His great discovery was what may be called the economy of punishment, the reduction of punishment to the minimum requisite for the protection of the liberty of others.

The mitigation of the penalties assigned to offences arising out of strikes was no doubt part of the general movement instituted by Beccaria. Incidentally, however, this relaxation in penalties has strengthened the positive belief of the working classes in what they term the 'right to strike.' The principal obstacle in the way of various remedies that have been proposed for the prevention or limitation of strikes is this idea, that the 'right to strike' must be kept inviolable. It is necessary, then, to discuss the moral principles on which this right may be supposed to rest. As stated above, the two moral principles which have dominated the development of public opinion and, in consequence, of legislation since the end of the eighteenth century have been the negative principle of non-interference or maximum individual liberty, and the positive principle of the maximization of happiness. Beccaria and the philosophers who sowed the seeds of the French Revolution thought that the attainment of the first was the best way to attain the second. As regards social legislation of all kinds, the trend of opinion in the nineteenth century was towards the idea that the second principle (the maximum happiness) can best be attained by the suppression of the first. If a thing can be done in two ways, either by individual or voluntary effort, or, alternatively, by the compelling power or the administrative action of the State, it is maintained that the second is to be preferred on account of its educative effect and the promotion of the socialistic ideal. The method of legal enactment on this view is to be preferred to the method of voluntary association. This idea, that the power of the State should be used in the positive advancement of utility, was, in the main, due to Bentham, and has been the great motive power of social reform since the industrial revolution.

The 'right to strike,' as commonly expressed in the discussions that arise in the actual conflicts between Labour and Capital, cannot well be deduced from either of these principles (liberty or utility). At first sight, no doubt, it seems only an expression of the natural liberty of individuals, to do as they like with their own labour and their own faculties. But absolute liberty of this kind is impossible under any social arrangements. Beccaria, who made individual liberty fundamental, regarded the power of the State as a kind of deposit made up out of the contributions of fragments of the freedom of individuals. By natural instinct, every one tried to give up or contribute as little as possible of his own freedom to this general fund. And, conversely, by the same natural instinct, every individual and every class with common interests tried to use this general deposit for the promotion of individual or class advantage. The great task of the lawgiver and the governor was to prevent this general deposit of freedom being used for particular forms of oppression. It is clear that a strike on a large scale in any of the primary industries of civilization indirectly interferes with the freedom of labour of numbers who are not directly concerned in the particular dispute. After a certain point, the stoppage of transport or the stoppage of the supplies of coal, or of any other primary necessary, means the destruction of the right to work of Labour in general; and the insistence on the liberty of the transport workers or the colliers, and so on, may mean absolute tyranny over the rest of the community. The extreme point is never reached, and never can be reached, because the workers primarily concerned will themselves suffer too severely.

As soon, however, as a strike of this character begins the effects also begin, and the promotion of the liberty of the few begins to curtail the liberty of the many. In some cases this 'right to strike' is supposed to carry with it the right to break actual contracts, and resentment is shown against any attempt to enforce the corresponding penalties. And if a strike is on a scale sufficiently large, the legal remedy is practically nullified, if directed against the individuals concerned. If all the people engaged in all kinds of transport were to strike to-morrow without notice, in spite of definite contracts, it would be impossible to use the power of the law to enforce the payment of damages; and, even if the direct damages were enforced, there could be no remedy for the indirect losses incurred. Though the right to strike is not carried so far as to break contracts, the interference with the liberty of others may be very great. It is a commonplace of the law of contract that in no contract can all the conditions be expressed, and in matters affecting trade and industry most contracts have implied conditions that rest on the custom of the trade or industry. What is true of legal contracts is also true of those agreements which cannot be directly enforced in the courts of law, but which are essential for the conduct of modern industrial life. All the industry of a nation rests on the fundamental assumption that reasonable expectations will be fulfilled. The term reasonable is elastic, but it is not indefinite and vague. Most of the business of the world is carried on by this observance of, and respect for, reasonable expectations. If every one felt at liberty to do as he pleased, if no penalty was in practice enforceable, if every one could take advantage of every opportunity of self-interest within the technical law, civilization in the modern sense would go to pieces; liberty would degenerate into anarchy. The interference with the liberty of others is often shown in the incidents connected with picketing, and with the refusal of Unionists to work with non-Unionists. If carried to an extreme, this claim on the part of any particular class or group of labour is, in effect, the insistence on a claim to monopoly. And the foundation of all monopoly is the restriction of liberty.

It would seem, then, that when we look to first principles, the right to strike can only be defended on the ground of maximum liberty if it does not involve greater interference with the liberty of others, and does not mean drawing on the common deposit of freedom for the advantage of a particular class. The practical bearing of the argument is seen by reference to the growing tendency to the sympathetic strike. The sympathetic strike obviously rests on the common-sense morality of the people concerned. The only effectual method of curbing a sympathetic strike is to appeal to the first principles on which common-sense morality rests. In the recent coal strike the liberty of the colliers not to work restrained the liberty to work of thousands of others.

The 'right to strike,' from the point of view of liberty, must be subject to the general conditions laid down by Adam Smith, who more than any one enforced the principle of non-interference with the liberty of labour. ‘The property which every man has in his own labour, as it is the original foundation of all other property, so it is the most sacred and inviolable. The patrimony of a poor man lies in the strength and dexterity of his hands; and to hinder him from employing this strength and dexterity in what manner he thinks proper *without injury to his neighbour* is a plain violation of this most sacred property.’ The right to labour, and the right to enjoy the fruits of one’s own labour, in modern societies, can only be enforced by means of bargains, and in large industries the method of collective bargaining has been more and more adopted as the best means of securing the ‘right of labour to what labour has produced.’ But this right, so far as it rests on liberty, implies that it is exercised ‘without injury to one’s neighbour,’ or, as Adam Smith says in another place, ‘Every man, so long as he does not violate the laws of justice, is left perfectly free to pursue his own interest his own way.’ The words ‘neighbour’ and ‘justice’ suggest limitations of the morality of collective bargaining (and its methods) even from the point of view of liberty.

The ‘right to strike,’ however, seems to be subjected to much more severe limitations when the supreme test applied is not that of non-interference, but that of maximum happiness. This principle (according to the *calculus of utility*, so dominant in modern political economy), applied to the gain and losses of strikes, shows that in most cases the particular losses exceed the particular gains, and that even the indirect gains are very often more than neutralized. But before examining these effects of strikes in detail, reference may be made to the morality of strikes in general, as based on the dominant social or moral principle of utility or maximum happiness. The gains (if any) from a rise of wages (to take the simplest case) effected by a strike accrue to the workers in the particular industry; but, as regards other industries, there is, so far, no compensation for the loss of wages during the enforced cessation. The organizers of a strike, if they base their morality on utility, ought to consider the losses they impose on the rest of the community, and ought to be assured that the gains of the strike will outweigh the whole of these losses. If this test were rigidly applied, and, in the modern fashion, the utilities and disutilities were put in terms of money, scarcely any strike would obtain a balance in favour of its morality—that is to say, so far as the immediate effects are concerned.

Accordingly, we are thrown back on the more distant aims and the more general advantages that are supposed to be realized. The argument most generally advanced is drawn from the analogies of war. It is easy to show that the direct gains of war are illusory, even if they lead to the acquisition of new territory and the payment of large indemnities. And with the development of civilization wars become more and more expensive; they are met more and more by the creation of debt, and the burden of the debt is, in practice, perpetual. But all history shows that wars are undertaken in spite of assured loss, and for ideas that do not admit of pecuniary estimation.

In the same way the right to strike is justified by its supporters, not by estimates of profit and loss of utilities reckoned in money, but by those moral ideas that are not expressible in terms of money, and very often not even in terms of moral principle. There is, for example, the idea of the solidarity of Labour; the idea that in some way the interests of Labour and Capital are opposed, and that in all cases any disadvantage to one side means an advantage to the other, and that to injure Capital is to benefit Labour. From this point of view any attack by Labour on any form of Capital seems to promote the general good of Labour, and seems to justify the sympathetic strike. The idea of the solidarity of Labour is still more effective when it is applied in the concrete to Trade Unions. Loyalty to the particular Union to which a man belongs is often the dominating motive of his conduct; and self-interest, family affection, and the dictates of cool judgment are made to give way to it. So far the analogy is exact with national honour and the binding force of patriotism. Even if the war means personal ruin and the individual disapproves of the cause or the conduct of the war, once undertaken, patriotism demands full self-sacrifice. Trade Unionists believe first in their duty to their own Union, and next in their duty to Unionism in general. And out of these notions of class loyalty they are prepared to strike, against their own individual interests and even against their own judgment. General ideas of liberty and of social happiness are of no avail against loyalty of this kind. It may even be contended that the self-sacrifice involved in such loyalty, from the point of view of the strikers, has a moral value that outweighs any immediate loss. The only way to meet this argument is to show that there may be some error in the estimate of the moral value.

These considerations are of special importance when the strike is undertaken not in connection with wages, but for one or other of the details summarized under the term 'conditions of labour,' or for the recognition of what is called 'a principle.' Quite recently (1911), for example, in the United Kingdom, the main object of the railway strike was said to be the *principle* of the recognition of the Trade Unions by the companies; and still more recently (1912) the miners were said to be contending for the *principle* of the Minimum Wage; and the last great strike in Lancashire was for the *principle* that Unionists might insist on refusing to work with non-Unionists. In the same way, every strike that is not definitely for some immediate economic gain to the strikers concerned is said to be for a principle. The use of the term principle in this case seems to be an abuse of language, for there is no real reference to fundamental principles of any kind. The Minimum Wage is not a principle, but is at the most one of the *methods* of securing better economic conditions for the employment of labour. The moral value of the Minimum Wage depends on the economic results. If it could be shown that the adoption of this so-called principle of a Minimum Wage would lead to lessened efficiency of Labour in general and to less employment of certain classes, then probably, on the whole, the real wages of Labour would fall. It might be that pauperism itself would increase. If such results should ensue, it is clear that the so-called *principle* of a Minimum Wage is only an illusory method of attaining the amelioration of the conditions of labour. Similarly, as regards the question of recognition of Trade Unions, the so-called principle is only one of the methods of rendering collective bargaining more effective from the point of view of Labour. The moral value to Labour depends on the economic results obtained. If by recognition it is meant that, by the intervention of their Unions, the men should have the power of control and management of the business concerned, then, on the analogy of the results of industrial partnership, profit-sharing, productive co-operation, and the like, it is quite possible that the control may be less efficient economically than before, and that in the end the wages of Labour and the conditions of Labour may be adversely affected. If, on the other hand, as is also possible, the recognition means the direct presentation of grievances and the indication of improvements in the details of management, then it is also possible that recognition may mean an improvement in the condition of Labour. But the point is that, whether recognition is good or bad, it is not a question of principle but of method. The case of the refusal to work with non-Unionists is, again, not a question of principle, but a question of applying to some form of labour the method of *monopoly* in place of competition. The ultimate aim is the improvement in the economic condition of the class concerned directly, and indirectly of improving the general condition of Labour, and it is quite possible that freedom of competition, in the fullest sense or with various modifications, may be found to be a better means for the attainment of the end than the blind application of the method of monopoly.

We are in this way brought to the conclusion that, from the point of view of the workers themselves, the strike is a method of doing business or of making bargains. The business may be of a very special character, in which one particular employer is concerned and one set of his workmen, or the business may be an attempt to raise general wages at the expense of profits in general or of the consumer. But if the strike, whether particular or general and sympathetic, fails in this object, it is a failure in method. If it can be shown that strikes in general, or strikes of particular kinds for particular objects, are not advantageous economically to Labour (in particular or in general), the *method* of strikes must give way to some other method of conducting the business of bargaining between Labour and Capital. It is from this point of view that economic analysis is of the utmost importance; the application of legal and even of moral principles must depend on the economic conditions revealed under which strikes are supposed to take place.

3. **Economic Causes.**—The economic (as distinguished from the sentimental) causes of strikes and their immediate objects are so varied that a different economic

analysis is required in the different cases. Until quite recently the most important and frequent strikes were on account of wages—to effect a rise or resist a fall in some particular industry. And, either directly or indirectly, the price of labour must always be one of the principal causes of strikes. The recognition of Unions means the recognition of a certain method of fixing the price of labour—that is, the price to be paid for certain kinds of work done in certain ways. The price of labour is as unmeaning as the price of 'cloth' or the price of 'transport' or of 'steamers,' unless some idea is given of the quantity and the quality of the commodity or labour to be had at the price.

A rise in price may be obtained either by getting more money for the same amount of commodity (or labour), or by getting the same or even a less price for a lesser quantity or inferior quality of the commodity (or labour) named. Strikes that appear to be for principle are often for the lessening of the 'quantity of the labour' to be given, and in reality are just as much concerned with the price of labour as if directly for a rise in wages.

All prices not fixed by authority (of law or custom with the force of law) are determined by the supply and the demand. Both depend on a vast number of variable elements, and these elements often interact. The supply of labour and the demand for labour also depend on a mass of variables, and some of these elements are under the more or less complete control of the organizations of labour that, in the extreme case, adopt the method of strikes. It is sometimes said that the determination of wages ought to be, and must be, left to the law of demand and supply, and it is inferred that strikes which *interfere* with this law are to be condemned as useless or immoral. This view of the law of demand and supply in relation to strikes is either unmeaning or fallacious. The idea of supply under normal conditions does not mean that a certain amount of something (dead or living) must be got rid of at a definite time at any price (or no price), as in the case of a bankrupt stock. In general, as the price offered by the market falls the less eager sellers withdraw, and it may happen that at the price none of the apparent supply will be an effective supply or to be had at the price. The supply of labour also means the supply at a price. If the price offered falls below a certain point, and if the men concerned are able to withhold their supply (that is, if they are not, in effect, bankrupt), it may well happen that in the meantime the demand for labour will rise and the higher price may be obtained, though this price is, of course, determined by the *conditions* of demand and supply. But the conditions affecting the supply price of labour include the degree of organization and the power of withholding supply.

Again, demand does not mean such a demand as must be satisfied *quand même* to the full extent of the buyers' means. Demand is also demand at a price. If the supply price rises, less will be demanded; but if there is competition, this less amount will be taken at this higher price.

It is sometimes supposed that collective bargaining is not subject to the conditions of demand and supply, because competition is excluded. But monopoly prices, just as much as competition prices, depend on demand and supply, though they operate in a different way. In monopoly both demand and supply depend on variable elements, and these are more or less under the control of the monopolist. In a seller's monopoly the seller, if the monopoly is perfect, has the complete control over the supply. He can sell much at a small price or little at a high price—that is to say, according to the demand. And this control of the supply may enable him to get higher prices than if he were left to competition. Similarly, the control of the supply of labour may lead to higher prices. A strike is simply the withholding of the supply, except for a certain price; and Labour tries to exact a monopoly price.

In general, any labour monopoly is a monopoly of supply that is very imperfect. And the causes of the failures of strikes may be considered as examples of imperfect control of the monopoly of supply.

This view also explains the anxiety of the organizers of a strike to exclude any external supply either of the labour or of the corresponding commodity. It explains, also, the idea of the sympathetic or general strike, which is, in effect, the strengthening of the monopoly conditions of the particular strikers. In the face of the emergence in modern times of all kinds of monopolies, in spite of common law, statute law, and public opinion, it is only natural that the method of monopoly should be applied in the case of labour. If other things are not to be had except at the seller's price—the seller being a syndicate—why should not a syndicate of labour also fix its own minimum, and refuse to sell at any less price?

4. **Value of Strikes: 'Sellers' Monopoly Price for Labour.'**—An examination of strikes from the point of view of enforcing a monopoly price for labour does not give results at all favourable to this method of doing business. An effective monopoly in any form means the effective control of supply. It means that no substitute can be found in the time or in the place concerned. It implies that the demand will persist in spite of the cessation of the supply. But it is clear that the demand for labour of any kind is a demand on the part of the employers of capital, and the demand of Capital depends on the expected profit. Even if there is competition on the part of Capital, the demand for Labour will rapidly fall off as the expected profit falls. But in reality Capital is more likely to be effective in com-

bination (or under monopoly influences) than Labour. It is monopoly against monopoly. And the power of Capital is in general likely to be the stronger. The reserves of Capital are greater than those of Labour. The chief economic reason assigned for the superiority of collective bargaining to that of the individual bargains of Labour is that the individual has no real reserve price—he cannot withhold his labour for a better price. But the strongest associations of Labour also have their limits as regards a reserve price. The longer a strike lasts, so much less is the power of continuance—simply because the reserve funds are exhausted.

Under modern conditions strikes often rely on the injury inflicted not on Capital, but on the consumers or the general public. But the consumers (or the public) have no means of yielding to the pressure except through the employers of capital; and they have very little means of influencing Capital. Probably, indeed, the interests of the public as such would appeal more to Labour than to Capital, especially in the case of any primary necessary. And this is the reason why the organizers of a strike appeal to the so-called *principles* of their action. The appeal to principle is in general an acknowledgment that the appeal to pure business considerations would fail.

In any monopoly the best results are obtained by charging different prices to different classes of consumers; and this tendency of monopolists to charge differential rates is one of the reasons for their control by the State. But in a monopoly of labour, as shown in strikes, the main idea is to prevent any such differences in rates of wages. This may or may not be beneficial to Labour on the whole, but it takes away one of the sources of monopoly gains. Again, in ordinary industrial monopolies (trusts, etc.), the effective control of the industry is aimed at, not the absolute destruction of every kind of competition. In the case of a Labour monopoly, a great strike may take place on account of the employment of one man.

It is, of course, possible that for a time, under certain conditions, there may be an effective monopoly of some kind of labour, and a strike to give effect to it may, so far, be effective. The employer may be able (with an inelastic demand for the commodity) to raise the price without any serious diminution of the quantity sold, and in this case Labour gains at the expense of the consumer. And in certain cases such a gain might be justified on the grounds of maximum satisfaction—where the workers are numerous and poor, and the consumers are relatively rich and able to pay the price. Again, one class of labour may gain at the expense of others, and to the employer of capital this is a matter of indifference. But if such a policy is carried very far, it is suicidal to Labour, for the great body of consumers are engaged in some form of labour. A general rise in coal or in railway rates would benefit the labour directly concerned (if the rise in prices were transferred to wages), but it would injure other forms of labour as effectively as if taxes were imposed on coal or railway charges.

In the case of ordinary monopolies, so long as there is an increase of net revenue the monopolist is indifferent to the interests of the consumer and to the interests of other monopolists. But the ideas of the solidarity of Labour, and of the interests of Labour and of the main body of consumers being identical, take away from the monopoly power of Labour as compared with other things.

Any attempt to make a general monopoly of all kinds of labour, so as to enforce by a general strike a general rise in wages of all kinds, brings out still more forcibly the relative weakness of Labour as compared with Capital. Capital, if it is to be continued in effective working order, must be continuously replaced, and for this purpose not only must all kinds of depreciation be met, but a certain rate of profit must be earned. Gross profits are economically analyzed into different factors, and, if a strike is aimed at profits in general, it must be aimed at one or all of these elements. The first is insurance against risk; and if this is unduly trenched on for the benefit of Labour, the capital in the course of time wastes away. The second is interest pure and simple. Here it is plain that the interest element in gross profits must correspond more or less exactly to the general rate of loan interest. But the general rate of loan interest depends on causes operating all over the world. It depends on the demands for public expenditure of all kinds as well as on the demands for industrial undertakings. It is clear that strikes to raise wages at the expense of pure interest are not likely to succeed. Thirdly, there are in gross profits the earnings of management. And according to economic analysis a large part of these earnings is representative of the 'economics of substitution'—the employment of a small amount of more highly paid labour instead of a large amount of less efficient labour. If, then, the strikes lower earnings of management that are of this kind, they render the whole earning power of the business so much less. The influence of these different factors in gross profits is best seen in the case of companies. An examination of the profits earned by industrial companies of all kinds shows the comparatively narrow margin for a rise in wages. Interest at the usual rates, having regard to the risks, must be paid, or the original capital will not be subscribed, and no extension of the business can take place. The usual rates of wages of management must be paid, or the economies of the business will be lessened; and, obviously, all kinds of depreciation must be met. In the recent railway and coal strikes in Britain, the published accounts of various companies over a series of years of the returns to capital did not show any great margin for raising wages.

Even if, for the time, the strike is successful in raising wages (through the exceptional effects on the prices of services or commodities), deeper economic forces must then come into play, and any rise above that determined by these general conditions cannot be permanent. In the case of monopolies of ordinary commodities, there are very real economic limits to the rise in prices and to the growth of profits. And in the case of any attempted monopoly of labour, these limits to a rise in the price of labour are sooner reached and are more effective.

Again, it must be remembered that on general principles monopolies are supposed to be against the public interests; they are restrained by law, and, if allowed to come into existence, are, as far as possible, regulated, as seen, for example, in railways. If, then, Labour combinations aim at monopoly, they must be prepared to submit to regulation in the interests of the public. And this brings us back again to the position that, especially as regards public utilities (the supply of various necessaries), the particular interests of certain classes of labour and of capital are of minor importance.

5. **Strikes against Buyers' Monopoly Price for Labour.**—In the foregoing section stress has been laid on the difficulties from the point of view of Labour of enforcing by strikes an effective monopoly, and on the disadvantages to the public of such methods if attempted. But under certain conditions the strike may be the better course in a choice of evils. If the struggle between Labour and Capital is one of monopoly against monopoly, it may in some cases be a sellers' monopoly of labour against a buyers' monopoly of capital. If Capital in any form can enforce a buyers' demand for labour, if it refuses to buy labour except at a price below what would result from competition

(or general industrial conditions), then it may be that the only effective remedy is for Labour to institute a sellers' monopoly. A small reduction in wages often means a great rise in profit, and there is a constant tendency in the apparent interests of Capital to reduce wages, or not to raise them in response to improvements in trade. From this point of view, the strike and the threat to strike are regarded as defensive war necessary for the welfare of Labour. The threat to strike, it may be said, would be unavailing unless the threat were sometimes realized, and in this way the strike may be considered as an essential element in the bargaining power of Labour. And this is probably what is meant by the insistence on what is called the right to strike. And even from the point of view of the public, it may happen that this reserve power of the strike is sometimes of advantage in imposing limits on the monopoly powers of Capital.

But after all allowances are made for the possible advantages of strikes, at the best they seem to be remedies or preventives of disease rather than positive contributions to welfare. If they are needed, then the less they are needed and the shorter they are so much the better. An economy of strikes is as needful as an economy of punishments. Especially is such economy desirable when the strike affects public utilities directly or indirectly, and is not confined to limited classes ; and any strike of any magnitude is certain to have indirect effects on the public interests.

6. **Regulation of Strikes.**—It follows, then, that the prevention and the control of strikes ought to be made as efficient as possible in the public interests, and ought not to be slackened or enfeebled out of regard to ideas of non-interference with the liberty of workers, or with the insistence on so-called principles. And here we are confronted with the difficulty of making the law effective, supposing satisfactory laws for the regula-

tion of strikes are enacted. It is clear that a strike involving hundreds of thousands of individuals cannot be met by bringing them individually before the law courts. It seems, then, that the only alternative is to impose the penalties on the strike organizations—that is, practically on the Trade Unions. So far as the United Kingdom is concerned, this would involve the repeal or amendment of the Trade Disputes Act of 1906. The most gratifying feature of recent British strikes is the general absence of violence and the general respect for the ordinary law. In the coal strike, involving perhaps a million of workers, the notices were duly given, and there was practically no disorder. It would seem, then, that if legislation for the regulation of strikes were carried on principles which commend themselves to Labour in general, the law would be observed. But the recent experience in Australia and New Zealand of the legislative prevention of strikes is not encouraging.

A great deal would be gained if strikes were only undertaken in the last resort, after the usual means of conciliation (or arbitration) were exhausted, and after full publicity had been given to the grievances complained of or the benefits expected. It has been said that the best remedy for trusts is the compulsory publication of all the essential facts of the business and the management. In the same way, full publicity of the conditions of labour and of the rates of wages (and of profits) obtained in representative cases would be a great preventive of strikes—that is, the abuses of labour trusts. If a strike cannot be prevented, then the next best thing is to limit its duration and its extension. And special legislation might, perhaps, be devised for this purpose. It seems ridiculous that the executive government should be called in *ad hoc* whenever any strike assumes a certain magnitude or affects certain public interests. But, as before, the difficulty is not in devising legislation, but in making it effective in practice.

In any legislation affecting strikes and Labour combinations used for the furtherance of strikes, it is obvious that similar and equally effective legislation must be introduced as regards lock-outs and combinations of Capital. The penalties in the case of Capital must be not simply the same as in the case of Labour, but of the same degree of efficiency. The adoption of a policy of this kind is in effect the substitution of the method of legal enactment or regulation for the method of unfettered collective bargaining. And any regulation must be effectively applied to both sides. It is quite possible that the method of legal enactment may lead to greater liberty and greater happiness both for individual labour and for collective labour than the method of unrestricted strikes. At the same time, the legal regulation and control of the strike would turn the attention of all concerned to those other remedies for the improvement of the conditions of Labour and of its relations to Capital, which cumulatively must have a great effect—for example, the various methods of industrial conciliation and arbitration, the methods of profit-sharing and industrial partnership, the national or municipal control of certain services, the regulation of migration and emigration, etc.

7. **Bibliography.** — Howell, *Conflicts of Capital and Labour* (1878); Webb, *History of Trade Unionism* (1896; 2nd ed., 1902); Webb, *Industrial Democracy* (1897; 2nd ed., 1902); Webb, *Problems of Modern Industry* (1898); Nicholson, *Strikes and Social Problems* (1896); Royal Commission on Trade Disputes and Trade Combinations (1906, Cd. 2,825).

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Surplus. See CAPITAL.

Sweating. See WOMEN AND CHILDREN AND THE LABOUR MARKET.

Sympathetic Strikes. See STRIKES.

Syndicalism. See LABOUR AND POLITICS; NEW LABOUR MOVEMENTS.

Syndicates. See COMBINATIONS, INDUSTRIAL.

Trade Boards. See WOMEN AND CHILDREN AND THE LABOUR MARKET; FACTORY LAW.

Trade Disputes Act, 1906. See TRADE UNIONS.

Trades Councils. See TRADE UNIONS.

TRADE UNIONS.

1. *History.*
  - (1.) *Origin of Trade Unions.*
  - (2.) *Legality of Trade Unions.*
  - (3.) *Repeal of the Combination Acts.*
  - (4.) *Formation of Trade Unions.*
  - (5.) *Revival of Trade Unionism,* 1840–50.
  - (6.) *Trades Councils.*
  - (7.) *The Movement for the further Legalization of Trade Unions.*
  - (8.) *Trade Unions and Politics.*
  - (9.) *The Trades Union Congress.*
  - (10.) *Decline of Trade Unionism.*
  - (11.) *The Rise of the 'New Unionism.'*
  - (12.) *The General Federation of Trade Unions.*
  - (13.) *The Labour Party.*
  - (14.) *The Trade Disputes Act,* 1906.
  - (15.) *The Osborne Case.*
  - (16.) *Trade Unionism among Women.*
2. *Statistics.*
3. *Bibliography.*

1. **History.**—(1.) *Origin of Trade Unions.*—There is no evidence of the existence in the United Kingdom of a Trade Union, properly so called, prior to the year 1700, and the popular notion that the Trade Union movement is a natural development of the old Gild system is probably quite erroneous.

The formation of numerous Trade Unions during the eighteenth century and the early part of the nineteenth century is undoubtedly due to the changed conditions of employment which began to prevail during this period. Previous to the industrial revolution the organization of industry was so simple that large numbers of the working classes were either independent producers, working on their own account, or might reasonably hope to become such by the exercise of thrift and industry for a few years. But with the introduction of machinery and steam-power a more complex organization arose, necessitating greater accumulations of capital than the ordinary journeyman could ever hope to have at his command. The great majority of workmen being thus inevitably confined for life to the sphere of journeymen, an employing class and an employed class became clearly differentiated, with different and indeed often hostile interests and sympathies. It was thus that the members of the employed class began to combine for mutual protection against their employers. These combinations, often temporary, but showing an increasing tendency to become permanent, were the first Trade Unions.*

The tendency of wage-earners thus to combine was greatly increased as Parliament, from the middle of the eighteenth century, gradually departed from the ancient policy of the kingdom which had long sanctioned the fixing of wages by legal enactment. The final adoption by our statesmen of the policy of *laissez-faire*, with the consequent exposure of the employed class to the full force of unrestricted competition, urged the latter to substitute for the legislative protection now denied to them the protection which combination would give. Thus numerous combinations of operatives took steps to enforce many obsolete laws under which the magistrates were empowered to fix wages, limit apprentices, and prohibit the use of certain machinery. The attempts of workmen in London and the south of England to secure the fixing of wages by the magistrates under the Elizabethan Statute of Apprentices led to the repeal of the main clauses of that statute in 1813 and 1814. A somewhat similar attempt, made by the Glasgow cotton-weavers in 1812, had led to a general strike, in which the authorities intervened, and secured the conviction and imprisonment of the leaders under the Conspiracy Laws.

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* Mr. and Mrs. Webb, in their *History of Trade Unionism*, pp. 25–33, point out that Trade Unions do not universally owe their origin to the industrial revolution. Other causes were at work, and combinations of wage-earners were in existence fifty years before the factory system.

(2.) *Legality of Trade Unions.*—All combinations of workmen were not illegal nor discountenanced by the authorities. The attitude of the law towards them depended upon the nature of their purposes. A considerable number of the early Trade Unions contented themselves with taking steps to enforce the existing laws relating to wages, etc., or with petitioning Parliament to enact new laws. Workmen's associations for such purposes were not, as a rule, molested by the authorities, though the Glasgow case above referred to is an exception to the rule. Where, however, the legislature had regulated wages and labour conditions in any given trade, a combination of workmen to resist the operation of such regulations would be illegal; and during the last quarter of the eighteenth century the common law was steadily modified by judicial interpretation, until most combinations of workmen had become illegal. At last the Combination Acts of 1799 and 1800 expressly enacted what the judges had already ruled, and forbade, under penalties, combinations not only of workmen, but of employers. In Ireland combinations in all trades had been prohibited by statute as early as 1729.

While these measures of repression checked the power and the growth of combinations amongst what were then the lower grades of workers—namely, the factory operatives and miners—they merely had the effect of stiffening the backs of the more prosperous and better organized workers, such as the compositors, the coopers, the shipwrights, and other handicraftsmen. These seem, during this period, to have imposed a more stringent discipline amongst themselves, and to have developed an arbitrariness which they had not shown before. In many a trade loose federations of the Unions in the trade sprang up, and action on a national scale was more than once attempted with success. Instances are also frequent of financial support being given by one Union to another.

(3.) *Repeal of the Combination Acts.*—With the peace that followed Waterloo came a period of industrial depression and reduced wages. The universal discontent manifested itself in strikes all over the country, and the authorities strove to cope with the trouble by force, by prosecution, and by heavy sentences. This turned the minds of reformers once more to those schemes of Parliamentary reform which had received consideration some forty years previously, but which the revolutions in America and France had effectively postponed. The agitation which followed led to the Reform Act of 1832. But side by side with this movement there was growing another agitation, engineered out of Parliament (and amongst the working-men) by Francis Place, and in Parliament by Joseph Hume. This was the movement which culminated in the repeal of the Combination Acts of 1799 and 1800. The repeal was effected with little notice in 1824, but the result was the formation of Trade Societies in all parts of the country. As trade was now improving and prices rising, the moment seemed opportune for a general attempt to secure a rise of wages, and the country was shortly suffering from an epidemic of strikes. A Parliamentary Committee was constituted to inquire into the conduct of the workmen and the effect of the Act, and in 1825 the Act was repealed, and a less comprehensive measure enacted in its place. But the Act of 1825 was nevertheless a very substantial concession to the advocates of a free system of Trade Unionism. Broadly speaking, it declared once more the illegality of combinations of employers or workmen, and prohibited them under penalties; but combinations for the purpose of regulating wages and hours of labour were declared legal. The effect of the Act was thus to establish finally the workmen's right to bargain collectively with their employers, and, by concerted action, to withhold, if necessary, their labour from the market.

(4.) *Formation of Trade Unions.*—The next twenty years were marked by numerous attempts to form Trade Unions—that is, combinations embracing members of different trades—an object which in modern times is secured by amalgamations of Unions serving related trades, and federations of Unions serving different trades. In 1830 the *National Association for the Protection of Labour* was established at the instance of John Doherty. This soon embraced 150 separate Unions, and included calico-printers, cotton-spinners, hosiery workers, silk-weavers, moulders, mechanics, blacksmiths, and a few Unions in the building trade. The members were drawn principally from the northern and midland counties, and within nine months reached 20,000. The Association also started a weekly newspaper, the *Voice of the People*, which, though costing sevenpence, attained a circulation of 30,000. But both the Association and its organ fell into decay, and after 1832 no more was heard of either.

The *Builders' Union or General Trades Union*, which was extremely active and militant during the years 1832–4, embraced Unions of the joiners, masons, bricklayers, plasterers, plumbers, painters, and builders' labourers, and extended over the whole country.

In 1830 John Doherty established the Potters' Union, and in 1834 arose the *Grand National Consolidated Trades Union*, in the organization of which Robert Owen played a prominent part. The growth of this Union was phenomenally rapid, and in a few weeks half a million members from all parts of the three kingdoms joined it—societies of farm labourers, chimney sweeps, shop assistants, cabinetmakers, female tailors, and bonnet-makers being amongst those included.

The Dorsetshire 'Martyrs.'—It was at this time, and in connection with the rise of the Grand National, that the prosecution and transportation of a number of agricultural labourers in Dorsetshire took place. For a full account of this, see Webb's *History of Trade Unionism.*

The only result of this prosecution was to cause the Grand National and other large Unions to discard the oath from their admission ceremony. A series of unsuccessful strikes did far more to shake the power of the Grand National than the repression of the authorities could do. The members of this organization seem to have had more enthusiasm than staying power, and repeated defeats caused a rapid falling away of the constituent societies; and the Grand National, like the National Association for the Protection of Labour and other Trades Unions of the period, gradually melted away.

The discouragement and apathy of the workers had other results, for the constituent Societies of the Grand National themselves began to suffer disintegration, and in many trades there was a reversion to the primitive local Trade Clubs.

During these years Robert Owen made a serious attempt to capture the Trade Unions for the purpose of working out his schemes. The attempt failed, but one result of the Owenite propagandism was a number of attempts by Trade Unions to 'recover control of the instruments of production,' by forming themselves into 'Associations of Producers,' and it was only through the failure of these attempts at co-operative production that the idea was finally abandoned by Trade Unionists.

The conduct, demeanour, and language of Trade Unionists during the fourth decade of the nineteenth century was marked by a considerable amount of haughtiness and contempt for employers, and much of the prejudice which still exists against Trade Unionism may be traced to this period. But the records of the time also show an almost incredible degree of unreasonableness, intolerance, and tyranny in the employers' attitude towards their workmen, and to this cause the violent and insolent revolutionary Trade Union spirit of the time must in the main be attributed, though the Owenite teachings must accept a part of the responsibility.

(5.) *Revival of Trade Unionism*, 1840–50.—During the 'forties, as a result partly of the spread of education and partly of an increased and steadier prosperity in trade, a revival of Trade Unionism began. Abandoning their revolutionary and violent aims, the Trade Unionists of this period sought to utilize the existing law wherever it was in their favour, and where it operated oppressively against them, to obtain amendments by diplomacy and constitutional agitation. One of the principal events of the time was the growth of strong Unions of miners in Northumberland, Durham, Lancashire, and Yorkshire, and the federation of these in 1841 to form the *Miners' Association of Great Britain and Ireland*. Advised by W. P. Roberts, the 'miners' attorney-general,' the Association intervened so frequently and successfully to protect its members from legal oppression that, to quote Roberts's own words, 'in a short time there was no oppression to resist.' The Association was, however, less successful in its conduct of strikes, and it never recovered from the disastrous failure, in 1844, of the strike against Lord Londonderry and other employers of the north. By 1848 it had ceased to exist, though before the strike it had numbered 100,000 members.

In 1845 was formed the *National Association of United Trades for the Protection of Labour.* The aims of the Association were to protect the interests and promote the well-being of the associated trades by mediation, arbitration, and legal proceedings, and by promoting political and educational movements for the improvement of the condition of the labouring class. The Association differed from the general Trade Unions mentioned above in leaving intact the organizations of the particular trades. The larger organizations, however, did not, as a rule, join the Association, which thus consisted mainly of the smaller and less efficiently organized Unions. A few months after its foundation the Association divided itself into two bodies—(*a*) the National Association of United Trades for the Protection of Labour, which was to deal with trade disputes, and to look after the interests of Labour in the House of Commons; (*b*) the National United Trades Association for the Employment of Labour, whose function was to raise capital for the employment of men on strike. A period of trade depression, with numerous strikes, many of them unauthorized by the Association, depleted the funds, and finally destroyed the credit of the Association; and though it continued for some years to promote and support Bills in Parliament, it did not, after 1851, exert much influence in trade movements of a militant kind.

A striking feature of the Trade Unionism of this period was the desire for mental improvement and accurate knowledge of industrial facts. Many special trade journals, too, were started at this time—for example, *The Potters' Examiner*, 1843; *The Mechanics'*

Magazine, 1841; *The Bookbinders' Circular*, 1850; *The Flint Glass Makers' Magazine* in 1850, etc. It is probable that in this educative tendency may be seen the influence of the printing trades, which were now coming into the Trade Union movement.

In many Unions a growing hatred and disbelief in the efficacy of strikes is now being voiced, and the power to declare a strike is being withdrawn from the branches and vested in the central bodies of the Unions. Some Unions, by closing the trade to newcomers, limiting apprentices, abolishing overtime, and assisting emigration, seek to increase the demand for labour, and consequently to raise wages.

The Amalgamated Society of Engineers.—In 1850, through the efforts of William Newton and William Allen, the Amalgamated Society of Engineers was founded by amalgamating the Journeyman Steam-Engine and Machine Makers' and Millwrights' Friendly Society, and six other Societies of the engineering trade. The first-named Society gave to the new amalgamation three-fourths of its membership, and its constitution, rules, scheme of benefits, trade policy, and staff were taken over bodily by the Amalgamation. The constitution and policy of the Amalgamated Society of Engineers are of prime importance, because they served as a model to the Amalgamated Society of Carpenters, the London Society of Compositors, and numerous other Trade Unions founded during the next twenty years. For a full account of the characteristics of this 'New Model,' see Webb's *History of Trade Unionism.*

The Amalgamated Society of Carpenters.—In 1859 a lock-out of 24,000 carpenters, masons, and bricklayers engaged in the London building trade, on the question of a Nine Hours' Day, resulted in a victory for the employers; but out of this struggle came the impulse which brought about the foundation in 1860 of the

Amalgamated Society of Carpenters and the *London Trades Council.* Under the secretaryship of Robert Applegarth the former body advanced so rapidly that in a few years it ranked next to the Amalgamated Society of Engineers in power and wealth.

(6.) *Trades Councils.*—The origin of Trades Councils is to be found in those temporary Strike Committees drawn from various Trade Societies in a locality to collect subscriptions and otherwise support a Society involved in a strike or lock-out. Similar Committees were also often formed to carry on an agitation for the repeal of, or to protest against the enactment of, an obnoxious and oppressive law, or to protest against some glaring abuse of the forms of justice. Such Committees existed temporarily at the time of the repeal of the Combination Acts in 1825, and at the time of the Dorchester trials. But by 1860 they had assumed a permanent form in London, Glasgow, Sheffield, Liverpool, Edinburgh, and other large towns. For statistics, see page 477.

(7.) *The Movement for the further Legalization of Trade Unions: the 'Junta.'*—The policy of centralization of administration and of employment of permanent paid officials brought to London, and hence into close and constant contact with each other, the ablest men of the Trade Union movement. Five names stand out from all the others—William Allen (Engineers), Robert Applegarth (Carpenters), Daniel Guile (Ironfounders), Edwin Coulson (London Order of Bricklayers), and George Odger (a member of a small shoemakers' Union). This group of five—the 'Junta,' as it came to be called—initiated the policy of participation in political movements which has culminated in our own time in the rise of a Parliamentary Labour Party.* In trade matters they sought to avoid strikes, and hoped to maintain the standard rate of wages by such liberal payments of out-of-work donations as would make it impracticable for employers to obtain workmen at less than the standard rate. In politics they aimed at the extension of the franchise, a national system of education, new Mines Regulation Acts, the amendment of the law of Master and Servant, and above all, the complete legalization of Trade Unions. As the constitutions and the traditions of many of the Trade Unions made political agitation impossible or difficult, the Junta performed most of its political work through the medium of the London Trades Council.

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* See Humphrey's *History of Labour Representation* for a fuller account of this phase of the Trade Union movement of the time.

The movement for the amendment of the Master and Servant Law was initiated by the Glasgow Trades Council, and resulted finally in the passing of the Master and Servant Act of 1867.

Trade Unionism was at this time threatened by a threefold danger—(1) a series of systematic attempts of employers to break the power of Trade Unions by general lock-outs of all the men in a particular industry, in cases of dispute between a single employer and his men; (2) the public panic created by the *Sheffield outrages;* (3) the decision in *Hornby* v. *Close* in 1867, by which Trade Union property was declared to be outside the protection afforded to property owners by the ordinary criminal law.

To meet the first-named danger the *United Kingdom Alliance of Organized Trades* was formed for the purpose of supporting members of locked-out trades, although internal friction and lack of money destroyed the Alliance before it achieved much.

In the hue and cry raised by the Sheffield outrages the Trade Unions took as prominent a part as the employers themselves, and were as urgent in their demands for an investigation. A Royal Commission was appointed to inquire, not merely into the outrages, but into Trade Unionism itself. The Junta succeeded in obtaining the appointment of Messrs. Thomas Hughes and Frederick Harrison as Commissioners, a course which secured for the Unions an impartial hearing. The case for the Unions was largely conducted by the Junta, and with such success that the report of the Commission made it clear that Trade Unionism as a whole was free from complicity in the outrages.

The Commission also considered the question of securing Trade Union property against the dishonesty of officials, and recommended that the protection of the law should be afforded to the funds of such Trade Unions as conformed to certain regulations as to rules, and obtained registration. But the decision in *Hornby* v. *Close* caused the Junta to summon a Conference of Amalgamated Trades, and for more than three years this Conference, advised by such men as Frederick Harrison, Professor Beesly, Thomas Hughes, Henry Crompton, and others, was wrestling with the problem. The final outcome was the passing of the Trade Union Act of 1871.

(8.) *Trade Unions and Politics.*—The Trade Union Act, 1871, legalized Trade Unions, enabled registered Trade Unions to protect their funds by summary procedure before magistrates, and at the same time left all Trade Unions free to carry on their ordinary business of collecting contributions, etc., and distributing benefits without interference from the Courts. To obtain the passing of this measure the Conference of Amalgamated Trades and the Trades Councils found it necessary to embark on a course of political agitation which was a significant departure from the 'no politics' tradition of the Trade Union movement. The Bill desired by the Trade Unions was passed, but along with it was also passed the Criminal Law Amendment Act, which, by re-enacting and codifying numerous judicial decisions regarding conspiracy, picketing, etc., greatly increased the stringency of the law relating to strikes and trade combinations.

(9.) *The Trades Union Congress.*—On the passing of the Trade Union Act of 1871 the Conference of Amalgamated Trades dissolved itself, and its place in the Trade Union movement was taken by the Trades Union Congress. This body arose out of two annual Conferences of Trade Unionists which had been convened by the Manchester and Salford Trades Council (in 1868) and by the Birmingham Trades Council (in 1869).

In 1871 the Junta summoned in London the first Trades Union Congress. The Congress appointed a *Parliamentary Committee*, which was henceforth to be the head of the Trade Union movement. To this body now fell the task of procuring a repeal or amendment of the Criminal Law Amendment Act. Lobbying and deputations proving ineffective, more drastic political methods were adopted. A Labour Representative League had already existed for some years, and had run independent Labour candidates at by-elections; but in 1874 the Trades Union Congress itself officially sanctioned Parliamentary candidates, and thirteen Labour candidates went to the poll at the General Election. Of these Alexander Macdonald and Thomas Burt were elected—the first Labour members of the House of Commons.*

The election also resulted in the return of a new Government to power, and in 1875 the Criminal Law Amendment Act of 1871 and the Master and Servant Act of 1867 were repealed, and the *Conspiracy and Protection of Property Act* and the *Employers and Workmen Act* were passed.

Section 3 of the former Act declared that an agreement by two or more persons to commit an act in contemplation or furtherance of a trade dispute shall not be indictable as a conspiracy if the act would not be a crime were it committed by one person alone. (See also page 472.) By this provision the legality of a peaceful strike is placed beyond doubt.

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* For an account of these early attempts at Labour representation, see Humphrey's *History of Labour Representation.*

Section 7 makes picketing legal, if carried on peacefully and for the purpose of communicating or obtaining information (see also page 472), though it contains numerous safeguards against violence, intimidation, and other forms of oppression which strikers often resort to.

As to the Employers and Workmen Act, see FACTORY LAW: BRITISH.

Two successful battles fought by the Trade Unionists of the north of England require special mention—namely, the establishment, in 1860, by the Yorkshire miners of their right to appoint and control independent checkweighmen; and the initiation, by the North-east Lancashire Association of Cotton Weavers, of the system of detailed and complicated lists of piecework rates, the interpretation and application of which is left to expert calculators appointed by the Union, and has made the piecework system of Lancashire work with marvellous smoothness and success. For a detailed account of this system, see Webb's *Industrial Democracy*.

In the political field the most notable achievement of the Lancashire Unions was the securing of a legal working week of 56½ hours. This enactment, though applying only to women and children, has, in practice, effected an identical limitation of the hours of men. About this time the engineers, and to a less extent the workers in the building trades, obtained a nine hours' day from the employers by consent, and without legislation.

(10.) *Decline of Trade Unionism.*—The period 1874–75 is one of the high-water marks of Trade Unionism in this country, the membership of the Societies represented at the Trades Union Congress in 1874 being 1,192,000. The expansion was felt even in the agricultural world, and the Agricultural Labourers' Union, founded by Joseph Arch, included 100,000 members. During this period we notice a growing tendency among employers to recognize the Unions, while both employers and workmen are becoming more willing to submit their differences to arbitration.

But this success was only temporary, for in 1874 began one of the worst periods of trade depression, and one of the most disastrous series of unsuccessful strikes ever known. Hundreds of small Societies, and even some of the larger ones, disappeared or were almost depleted of their funds. Nevertheless, Trade Unionism as a whole weathered the storm, for the Unions of the engineering, building, and cotton trades remained, the local Trades Councils remained, and the Trades Union Congress met regularly, though its history during the years 1875 to 1889 is uneventful.

The growth of the movement at this time was checked by a fundamental divergence of policy on the wages question. One section of the movement still clung to the doctrine of *laissez-faire* and the principle that wages should follow prices, while the other was demanding more State regulation and the establishment of a minimum wage. Moreover, changes in industrial processes had led to overlapping of trades, and many of the Unions were fiercely fighting each other for the rights of their members to work in certain trades.

Such differences, of course, militated severely against the harmony of the local Trades Councils, and rendered abortive a number of attempts made by the Trades Union Congress at federation on a national scale.

The influence of the Junta and of the London Trade Unions on the general movement was now rapidly declining. The Engineers' and Carpenters' Societies, through over-attention to their 'friendly and provident' purposes, were becoming apathetic and unprogressive in their trade policy. A number of provincial organizations of ironworkers began to expand at the expense of the Amalgamated Society of Engineers. The transfer to Manchester of the head office of the Amalgamated Society of Carpenters further weakened the hold of London on the country as a whole, and made possible, and perhaps inevitable, the growth of the sectional spirit alluded to.

(11.) *The Rise of the 'New Unionism.'*—While organized Labour was thus ineffective, the widespread propagandism of the Single Taxers and the Socialists was producing in the minds of the rank and file of the Trade Unionists a change of opinion which manifested itself in the 'New Unionism' of 1889–90. The characteristics of the New Unionism were :—

(*a*) A reaction against the spirit of exclusiveness, which practically shut out of the movement the great mass of unskilled and badly paid labourers.

(*b*) A reaction against the policy of combining friendly benefits with trade purposes, and a tendency on the part of the new Unions to restrict themselves to the latter.

(*c*) Demands for legal limitations of hours of labour.

(*d*) A marked tendency to adopt the Collectivist attitude in approaching Labour problems, as contrasted with the individualism of the old school of Trade Unionists.

(*e*) A desire for intercourse and common action with foreign Trade Unions.

(*f*) The advocacy of the policy of appealing to the State and the municipalities to concede to their employees standard rates of wages and hours of labour.

The Trades Union Congress was responding, though slowly, to the new influence, and in 1883 had passed a resolution in favour of an Eight Hours' Day for the employees of public authorities and companies exercising statutory powers ; while in 1887 and 1888 it had passed resolutions in favour of Land Nationalization.

In 1888 the first International Congress of Trade Unions was held in London, and in the same year the hostility of the Northumberland and Durham miners to the Eight Hours' Day, and their determined adhesion to the principle of a sliding-scale, by which wages varied with the price of coal, resulted in the formation by the non-sliding-scale districts of the *Miners' Federation*, which grew from 36,000 members in 1888 to 200,000 in 1893. (See also statistics, page 476.)

The success of the London Match Girls' Strike in 1888; the formation in the same year of the Gas Workers' and General Labourers' Union, which, without a strike, won from the London Gas Companies a reduction of the working day from twelve to eight hours; and finally, the great Dockers' Strike in the autumn of 1889, stimulated the creation of a great many Unions among the unskilled labourers. Within one year of the Dockers' Strike probably 200,000 unskilled workers came into the ranks of Trade Unionism. Trade was now improving, and the impulse to growth made itself felt in the older Unions. Thus the Unions in the shipbuilding and metal trades increased their membership from 115,000 in 1888 to 155,000 in 1891, and those in the building trades increased from 57,000 to 94,000 in the same period. The National Society of Boot and Shoe Operatives rose from 11,000 to 30,000, and the Amalgamated Society of Railway Servants from 12,000 to 30,000. The growth of the Miners' Federation from 36,000 to 200,000 has been already mentioned. In addition new Trades Councils were being formed everywhere, while federations of kindred trades were taking place.

The most noteworthy incidents in the Trade Union history of the last twenty years are the formation of the General Federation of Trade Unions, and the Parliamentary Labour Party, the growth of Trade Unionism among women, and the passing of the Trade Disputes Act, 1906.

(12.) *The General Federation of Trade Unions*, founded in 1899, is a federation mainly for 'trade' purposes. The idea of the founders was to weld the different Trade Unions into a single army, capable of concerted movement, and backed by a gigantic central fund, the whole of which should be at the service of any society fighting to maintain its existence or to improve its lot.*

The benefits given by the Federation are financial, advisory, mediatory, and educational. In the three years, 1908–10, it has paid £215,565 in benefits. It takes no part in politics, except where Trade Union interests are threatened, and then it acts through the Labour Party and the Parliamentary Committee of the Trades Union Congress. (See also statistics, page 476.)

(13.) *The Labour Party.*—In February 1900, as the result of a resolution passed by the Trades Union Congress, a committee of representatives of Trade Unions, Co-operative and Socialistic Societies, and other working-class organizations was formed for the purpose of 'devising ways and means for the securing of an increased number of Labour members in the next Parliament.' This was the Labour Representation Committee. In the General Election of 1900 two of the candidates run by the Committee were elected; while at the election of 1906 twenty-nine were returned. In 1906 the Labour Representation Committee changed its name, and became the Labour Party, and three years later the Miners' Federation joined. At the General Elections of January and December 1910 the number of successful Labour candidates was forty and forty-two respectively.

(14.) *The Trade Disputes Act*, 1906, was passed to secure for Trade Unions an immunity from liability to actions of tort in respect of peaceful and non-criminal acts committed in connection with trade disputes. Section 1 of this Act supplements s. 3 of the Conspiracy and Protection of Property Act of 1875 by declaring that an agreement to do an act in contemplation or furtherance of a trade dispute shall not be actionable unless the act agreed upon is actionable *per se.* Section 2 extends s. 7 of the Act of 1875 by legalizing peaceful picketing when carried on for the purpose of persuading a person to work or not to work. Section 4 prohibits in general terms actions of tort against Trade Unions. In the recent case of *Vacher and Sons* v. *London Society of Compositors,* 28 T.L.R. 366, it has been held that the immunity extends to all acts of a Trade Union as such.

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* See an article by Mr. W. A. Appleton, the General Secretary of the Federation, in the Twelfth Annual Report. The article contains a good deal of valuable and interesting information as to the aims, work, and progress of the Federation.

(15.) *The Osborne Case.*—At the end of the year 1909 the House of Lords, in the case of *Osborne* v. *Amalgamated Society of Railway Servants* (1910), A.C. 87, decided that a Trade Union has no power to use its funds for political purposes. The result of this has been to make the Labour Party financially dependent on the voluntary subscriptions of its supporters. A Bill has, however, been promised by the present Government (1912), which, if passed into law, will, with certain limitations, restore the Trade Unions to their original position.

For details as to the origin and growth of the Labour Party, see Humphrey's *History of Labour Representation* (Constable).

(16.) *Trade Unionism among Women.*—The first successful attempt to organize women workers was the foundation, in 1874, of the Women's Protective and Provident League, now the *Women's Trade Union League.* Its main objects were to enable women to combine to protect their own interests, and to provide a benefit fund for sickness and other contingencies. In 1903 the affiliated membership of the League was

40,000, and in 1909 it had grown to 140,000. Probably half of the members enrolled each year fall out of membership within the year.

The *National Federation of Women Workers* was established in 1906, and in 1909 it had a membership of 3,000 in twenty branches.

There is a *Women's Trade Union Council*, founded in 1894, and a *Women's Trade and Labour Council*, founded in 1905.

For further particulars relating to Trade Unionism among women, see the *Eighty-third Bulletin of the Washington* [U.S.A.] *Bureau of Labor*, July 1909. (See also statistics, page 474.)

2. **Statistics.**—In the following tables a conveniently summarized account of the activities and the growth of Trade Unions during the ten years, 1901–10, will be found. They are taken from the *Report on Trade Unions*, issued by the Board of Trade in March 1912 (Cd. 6, 109).

TOTAL TRADE UNION MEMBERSHIP AND NUMBER OF UNIONS.

Year.	No. of Trade Unions.	Total Membership.	Increase (+) or Decrease (–) in Membership as compared with previous year.
1901	1,282	1,969,424	—
1902	1,250	1,954,594	– 14,830
1903	1,237	1,931,558	– 23,036
1904	1,211	1,901,674	– 29,884
1905	1,209	1,928,569	+ 26,895
1906	1,232	2,122,241	+ 193,672
1907	1,221	2,419,816	+ 297,575
1908	1,195	2,383,244	– 36,572
1909	1,168	2,362,450	– 20,794
1910	1,153	2,435,704	+ 73,254

(Cd. 6,109, xix.)

During the years 1908–10, 79 new Unions were formed; 106 Unions (most of them established since

1903, and with less than 1,000 members) ceased to exist; and 41 were amalgamated with other Unions (Cd. 6,109, xxii.).

Size of Trade Unions: Registered and Unregistered Unions.—Forty-eight large Unions in 1910 had a combined membership of 1,525,299, an average membership of 32,000. The remaining 1,105 Unions had 910,405 members, an average of about 800 members per Union. Most of the larger Unions are registered under the Trade Union Acts, while the smaller ones are not, as a rule, registered (Cd. 6,109, xxii., xxiii.).

Number of Members in Union at end of 1910.	Unions registered under the Trade Union Acts.		Unregistered Unions.	
	Number.	Membership.	Number.	Membership.
50,000 and above . .	8	701,291	—	—
20,000 and under 50,000	11	363,199	3	92,328
10,000 „ 20,000	17	249,640	9	118,841
5,000 „ 10,000	34	223,544	14	89,354
2,000 „ 5,000	53	177,904	28	96,368
1,000 „ 2,000	53	73,176	35	49,106
500 „ 1,000	74	54,033	59	41,869
300 „ 500	45	17,358	52	19,612
100 „ 300	113	19,616	174	28,613
50 „ 100	70	4,982	137	9,786
Under 50	60	1,886	104	3,198
Total . . .	538	1,886,629	615	549,075

(Cd. 6,109, xxii.)

Relative Proportions of Male and Female Membership.—The total female membership in 1910 was 221,283, out of a total Trade Union membership of 2,435,704—that is, about 9.1 per cent. These are found in 187 different Unions, but 83 per cent. are in the textile trades, the cotton industry accounting for as many as

68 per cent. It may be noticed that in the years 1908–10 the female membership increased by 16,757, while the male membership decreased by 869 (Cd. 6,109, xix., xxix.).

Groups of Trades.	Membership at end of 1910.		Increase (+) or Decrease (–) in 1910 as compared with 1907.	
	Males.	Females.	Males.	Females.
Building, Mining, Metal, and Transport Trades	1,496,587	508	– 23,990	– 697
Textile Trades :—				
Cotton :				
Cardroom Operatives	9,299	43,421	+ 1,002	+ 4,587
Spinners and Assistants	52,613	1,862	+ 4,008	+ 118
Weavers	43,470	105,560	– 3,420	– 4,866
Others	18,044	269	+ 762	– 83
Woollen, Worsted, and Stuff . . .	16,632	4,677	+ 6,075	+ 2,241
Linen and Jute . .	8,283	17,319	– 514	+ 2,852
Other Textiles * . .	12,116	7,712	– 75	+ 2,698
Textile Printing, Dyeing, Packing, etc. .	35,706	2,199	+ 5,620	+ 653
Total, Textile Trades	196,163	183,019	+ 13,458	+ 8,200
Other Trades :—				
Boot and Shoe . .	33,352	1,401	– 1,067	+ 404
Other Clothing . .	25,776	6,497	– 2,593	+ 1,449
Printing, Paper, etc. .	71,215	2,724	+ 4,743	+ 975
Shop Assistants, etc. .	50,291	6,021	+ 9,250	+ 945
Miscellaneous Trades .	138,575	7,660	+ 2,581	+ 892
General Labour † . .	110,904	7,104	– 9,924	+ 3,048
Employees of Public Authorities . . .	91,558	6,349	+ 6,673	+ 1,541
Total, Other Trades .	521,671	37,756	+ 9,663	+ 9,254
Grand Total . . .	2,214,421	221,283	– 869	+ 16,757

* Hosiery, carpet, elastic web, lace, and silk.

† Including Unions which admit workers in textile and other trades.

Note.—In Unions which admit both male and female members, the exact numbers of each sex are not always known, but the figures given in the Table are approximately correct [Cd. 6,109, xxx.].

Federations of Trade Unions.—There are 113 different federations of Trade Unions, with a gross membership of 3,369,032. Many Unions are affiliated to more than one federation, and the total thus given involves much duplication. The largest Federations are the General Federation of Trade Unions (see page 471), with 709,564 members at the end of 1910; the Miners' Federation of Great Britain, with 597,154 members; the Federation of Engineering and Shipbuilding Trades of the United Kingdom, with 372,186 members; the British Metal Trades Federation, with 204,331 members; and the Northern Counties Textile Trades Federation, with 138,158 members. For fuller particulars of the various federations, see Cd. 6,109, lvii.–lx.

The following table shows the extent to which the workers in the principal trades of the country are organized into Federations:—

Year.	—	General Federation.	Building.	Mining and Quarrying.	Metal, Engineering and Shipbuilding.	Textile.	Printing and Allied Trades.	Other Trades.	Gross Totals.
1901	No.	1	33	11	15	16	10	20	106
	Members	420,606	101,952	572,220	272,242	305,603	69,524	102,903	1,845,050
1902	No.	1	30	11	15	19	2	18	96
	Members	414,446	102,015	575,516	284,351	323,360	50,370	89,831	1,839,889
1903	No.	1	32	11	14	19	2	17	96
	Members	403,391	107,667	565,060	277,897	280,525	48,988	92,684	1,776,122
1904	No.	1	30	11	14	20	2	19	97
	Members	396,226	122,772	552,384	383,221	287,095	55,130	97,963	1,894,791
1905	No.	1	24	11	14	21	2	19	92
	Members	477,891	67,263	548,203	314,393	396,774	55,957	53,988	1,914,469
1906	No.	1	22	11	17	23	2	20	96
	Members	623,449	56,410	573,952	403,308	437,265	56,726	56,622	2,207,732
1907	No.	1	20	11	18	35	2	21	108
	Members	601,195	58,151	741,234	477,448	577,599	60,267	324,585	2,840,479
1908	No.	1	19	11	16	38	2	24	111
	Members	705,630	52,880	881,466	460,476	616,892	64,820	350,431	3,132,595
1909	No.	1	17	11	17	41	2	25	114
	Members	698,950	43,729	906,240	474,621	633,849	66,479	342,898	3,166,766
1910	No.	1	16	11	16	42	2	25	113
	Members	709,564	37,807	912,742	627,228	629,176	70,902	381,613	3,369,032

(Cd. 6,109, lvii.)

Trades Councils.—At the end of 1910 there were twenty-three Trades Councils, each having a membership

TRADES COUNCILS: NUMBERS AND MEMBERSHIP.

Year.	No. of Trades Councils.	No. of Members of Trade Unions represented.
1901	189	794,293
1902	195	811,719
1903	212	846,387
1904	233	872,095
1905	239	901,625
1906	247	940,919
1907	253	984,492
1908	258	1,017,853
1909	258	993,481
1910	252	1,008,946

of more than 10,000, their total membership being 515,878. Of these nineteen were established before 1891. Ninety-nine had a membership of less than 1,000 each. Of these sixty-two were established subsequent to the year 1900 (Cd. 6,109, lxi.).

INCOME AND EXPENDITURE OF ONE HUNDRED PRINCIPAL TRADE UNIONS.

Year.	Membership at end of Year.	Income.			Expenditure.			Funds at end of Year.		
		Amount.	Per Member.		Amount.	Per Member.		Amount.	Per Member.*	
		£	s.	d.	£	s.	d.	£	s.	d.
1901	1,215,697	2,041,385	33	7	1,637,572	26	11¼	4,129,927	67	11¼
1902	1,212,874	2,084,621	34	4½	1,798,879	29	8	4,415,669	72	9¾
1903	1,201,704	2,098,907	34	11¼	1,915,709	31	10½	4,598,867	76	6½
1904	1,196,615	2,111,337	35	3½	2,043,161	34	1¾	4,667,043	78	0
1905	1,214,743	2,213,010	36	5¼	2,065,009	34	0	4,815,044	79	3¼
1906	1,299,326	2,346,340	36	1½	1,960,169	30	2	5,201,215	80	0¾
1907	1,461,542	2,497,428	34	2	2,055,991	28	1½	5,642,652	77	2½
1908	1,437,719	2,746,094	38	2½	3,210,530	44	8	5,178,216	72	0½
1909	1,425,318	2,563,519	35	11¾	2,687,104	37	8½	5,054,631	70	11
1910	1,459,687	2,691,277	36	10½	2,624,379	35	11½	5,121,529	70	2

* Based upon the total membership of the hundred Unions at the *end* of the year.

(Cd. 6,109, xx.)

EXPENDITURE ON VARIOUS BENEFITS BY THE ONE HUNDRED PRINCIPAL TRADE UNIONS.

Year.	Dispute Benefit.		Unemployed Benefits.		Other Benefits.*		Working and Miscellaneous Expenses.	
	Amount.	Percentage of Total Expenditure.	Amount.	Percentage of Total Expenditure.	Amount.	Percentage of Total Expenditure.	Amount.	Percentage of Total Expenditure.
	£		£		£		£	
1901	209,700	12·8	324,821	19·8	718,839	43·9	384,212	23·5
1902	219,844	12·2	429,418	23·9	747,378	41·6	402,239	22·3
1903	176,350	9·2	512,575	26·8	790,118	41·2	436,666	22·8
1904	117,222	5·7	654,181	32·0	849,222	41·6	422,536	20·7
1905	211,898	10·3	523,766	25·4	901,195	43·6	428,150	20·7
1906	153,179	7·8	424,398	21·6	922,823	47·1	459,769	23·5
1907	136,122	6·6	462,739	22·5	976,503	47·5	480,627	23·4
1908	615,350	19·2	1,004,685	31·3	1,063,165	33·1	527,330	16·4
1909	154,991	5·8	944,802	35·2	1,064,486	39·6	522,825	19·4
1910	353,734	13·5	695,774	26·5	1,059,060	40·3	515,811	19·7
Average for 1908–10	374,692	13·2	881,754	31·0	1,062,237	37·4	521,988	18·4
Average for 1901–10	234,839	10·7	597,716	27·2	909,279	41·3	458,016	20·8

* A small proportion of this expenditure (3·3 per cent. of the total expenditure for all purposes) consisted of payments to Federations, grants and fees to other Societies, etc.

The total expenditure for the three years 1908–10 was over £8,500,000. Of this, £1,100,000 (13·2 per cent.) was spent on dispute pay; £2,600,000 (31 per cent.) on unemployed benefits; £3,200,000 (37·4 per cent.) on sick, accident, superannuation, funeral, and other benefits; £1,600,000 (18·4 per cent.) is accounted for by working and miscellaneous expenses (Cd. 6,109, xxi.).

Benefits: Number of Persons entitled.—In 1908, out of a Trade Union membership of 2,359,867, the number entitled to *unemployment benefit* was 1,473,593; another 524,091 were entitled, when unemployed, to travelling benefit, payment of fares, etc., or to have their contributions remitted, or to receive occasional distress allowances; 728,593 members were entitled to *sick and accident benefit*; and another 221,934 were entitled to benefit in cases of *industrial accidents only.*

The following tables are a summary of the information (for 1908) as to the maximum weekly rates and duration of the three kinds of benefit above-named:—

Maximum Weekly Rate of Benefit receivable.	Membership eligible to receive		
	Unemployed Benefit.	Sick and Accident Benefit.	Industrial Accident Benefit only.
15s. 3d. and over . .	26,469	11,518	—
12s. 3d. to 15s. . . .	142,090	66,537	2,257
11s. 3d. to 12s. . . .	109,851	90,146	15,907
10s. 3d. to 11s. . . .	17,774	17,193	524
9s. 3d. to 10s. . . .	606,456	307,112	66,786
8s. 3d. to 9s. . . .	200,460	98,356	12,902
5s. 3d. to 8s. . . .	158,796	88,061	78,956
5s. and under . . .	149,506	42,481	34,581
Exact rate not ascertainable	62,191*	7,189	10,021
Total . . .	1,473,593	728,593	221,934

* Includes 17,955 members who do not receive unemployed benefit except in cases of infectious disease at home.

(Cd. 6,109, xxxiv.–v.)

Number of Weeks' Benefit receivable.	Membership eligible to receive		
	Unemployed Benefit.	Sick and Accident Benefit.	Industrial Accident Benefit only.
52	322,461	503,292	19,432
27 to 51	98,272	18,253	5,822
26	174,853	47,949	79,148
19 to 25	177,694	52,887	29,959
14 to 18	131,903	34,106	7,721
12 to 13	174,961	48,053	22,313
10 to 11	152,086	10,744	1,893
7 to 9	43,660	5,693	5,655
6 and under	141,052	3,395	32,713
Exact duration not ascertainable . . .	56,651	4,221	17,278
Total . . .	1,473,593	728,593	221,934

(Cd. 6,109, xxxvii.)

3. **Bibliography.**—Sidney and Beatrice Webb, *The History of Trade Unionism*, and *Industrial Democracy*. John H. Greenwood, *The Law Relating to Trade Unions*, and *The Theory and Practice of Trade Unionism*. A. W. Humphrey, *The History of Labour Representation*. *The Triennial Reports of the Board of Trade on Trade Unions*. *The Annual Reports of the Chief Registrar of Friendly Societies on Trade Unions*. J. H. G.

Trades Union Congress. See TRADE UNIONS.
Truck Acts. See FACTORY LAW: BRITISH.
Trust. See COMBINATIONS, INDUSTRIAL.

UNEMPLOYMENT.

1. *Definition of the Term.*
2. *Seasonal Fluctuations of Particular Trades.*
3. *Cyclical Fluctuation of Industry.*
4. *Permanent Changes of Industrial Structure or Methods.*
5. *A 'Reserve of Labour.'*
6. *Other Factors in the Problem.*
7. *Remedial Measures:—Labour Exchanges, National Insurance Act.*
8. *Bibliography.*

1. **Definition of the Term.**—Unemployment may, for convenience, be defined as the enforced idleness of men able and willing to be employed, which results from their inability to find an employer. As so defined, the term does not include the idleness of those who either are incapable of working (through bodily or mental disease or infirmity), or are for any reason whatever not desirous of working. Though, however, the problem of unemployment may thus by definition be distinguished from the problem of the sick, the aged, the 'unemployable,' and so forth, it is closely related to and shades off into them. The phrases 'capable of work' and 'willing to work' are not absolute, but relative to the nature of the work to be done, or the conditions on which it is to be done.

Taking the term, however, in the sense given above, unemployment is now recognized to be, even in itself, an extremely complex problem, arising not from any one cause, but from many distinct though interdependent factors in the structure of society and of human nature. Among the principal factors are :—

2. **Seasonal Fluctuations of Particular Trades.**—The differences between summer and winter employment in the building trades, or between June and August employment in dressmaking, are familiar instances of

seasonal fluctuation. Detailed inquiry shows that fluctuations of this nature, so far from being confined to one or two well-known instances, are found nearly everywhere. Most trades have their regular alternations of busy and slack months year after year. Each trade, moreover, has its own characteristic period of fluctuation; the busiest times of the different trades, so far from coinciding, are spread throughout the year, and so too are the slack times. 'Thus, January is the busiest of all months at the docks of London and most other ports, and is one of the busiest for coal miners; February, in paper-making; March, in steel-smelting and textile manufactures; April, in brush-making and the furniture trades; May, in engineering and shipbuilding, coach-making, hat-making, and leather work; May, June, and July, in all the ramifications of the clothing trades, as well as among mill-sawyers; July and August, for the railway service and all occupations in holiday resorts, as well as for carpenters and coopers; August and September, for all forms of agricultural harvesting; September, for plumbers and iron miners; October, in iron and steel works; November, in printing and bookbinding, in the tobacco trade, the tinplate manufacture, and the metal trades generally; whilst in December coal mining, the very extensive theatrical industry, the post office service, and the gas and electricity works are all at their greatest volume of employment. On the other hand, January shows iron-mining and the furnishing trades to be at their slackest; in February (contrary to popular belief) the plumbers have most unemployment of any time of the year; in March and April, the coopers; in May and June, the London dock labourers and the coal miners; in July, the iron and steel and tin-plate workers; in August, the paper-makers, printers, bookbinders, and tobacco workers; in September, the textile operatives and various metal workers; in October, all the clothing trades are at their slackest; in November, shipbuilding is, on the average, at its minimum; whilst December is the worst month for carpenters and engineers, mill-sawyers, and coach-builders, leather workers, and brush-makers' (*Poor Law Commission: Report of Minority*, Part II.). Some of these fluctuations are clearly the direct result of climatic conditions (for example, those in building and coal-mining); others appear to depend upon fashion alone (for example, those in printing); in others, no doubt, both climate and fashion have their effects.

3. **Cyclical Fluctuation of Industry**—that is to say, the roughly simultaneous alternation between good times and bad times, at intervals ranging from seven to ten or more years, which can be observed in nearly all trades. This fluctuation extends far beyond 'industry' in any narrow sense. It is a pulsation of the material activities of the nation which leaves its mark on almost every form of social and economic record. It dominates the statistics of unemployment, foreign trade, and the bank rate (that is, the average minimum rate per cent. of discount charged by the Bank of England in each year). It is reflected in such widely diverse records as those of the marriage rate, bankruptcies, consumption of alcohol, pauperism and vagrancy, crime, wages, prices, railway receipts, the London Bankers Clearing House, and the formation of companies. Only the death-rate, the price of Consols, and the price of wheat are exempt or, at least, do not appear to be appreciably influenced. Moreover, this phenomenon is not even merely national in its scope. A roughly contemporaneous fluctuation is to be traced in the economic life of America, and the principal European countries.

The last-mentioned fact is sufficient to suggest that the cause or causes of the phenomenon must be deeply seated, and in some way common to all advanced industrial communities. What the causes are, however, is extremely uncertain, and it is impossible here to do more than state the principal theories that have been advanced. Some writers regard cyclical fluctuation as mainly a financial phenomenon, arising from over-inflation and subsequent collapse of credit. Others explain it as a necessary consequence of competition in industry. Every demand for goods, it is said, sets in motion two or more competing producers, each of whom endeavours individually and without reference to others to supply as large a proportion as possible of the total demand. Taken together, therefore, all these competing producers tend to overshoot the demand. Competition involves a constant tendency to over-production, during a period of feverish activity, which is followed by a period of reaction and depression, as producers realize their mistake and endeavour to clear their stocks and cut their losses. A slightly different theory, advocated by Mr. J. A. Hobson, explains fluctuation by 'over-saving'—that is, by the devotion of too great a proportion of the total national income to investment in means of further production rather than to immediate consumption. The late Professor W. S. Jevons gave a physical explanation, connecting industrial fluctuation with the size of the yearly harvests, and this in turn with the well-known variation—over ten or eleven year periods—of the sun-spots. In its simpler form, this theory has become untenable, as the period of industrial fluctuation is not constant, but variable, lying apparently anywhere between six and ten years. The theory has, however, recently been restated by his son in an amended form, with allowance for several distinct and interacting cycles.

In regard to unemployment, the cyclical fluctuation of industry shows itself most clearly in the variation of the 'unemployment percentage,' a figure based upon returns made to the Board of Trade by a number of Trade Unions which provide unemployment benefits to their members. The minimum and maximum percentages, marking the years of prosperity and depression since 1860, have been as follows :—

Minimum.		Maximum.	
1860	1·85	1862	6·05
1865	1·80	1868	6·75
1872	0·95	1879	10·30
1882	2·35	1886	9·55
1889	2·05	1893–4	7·70
1899	2·40	1904	6·80
1906	4·10	1908	7·80
1911	3·0		

The later figures, and particularly the two last, are not strictly comparable with the earlier ones.

4. **Permanent Changes of Industrial Structure or Methods.**—Under this phrase may be included introduction of new machinery or processes (for example, the linotype in printing); substitution of one class of labour for another (women or boys for men, and *vice versa*); substitution of one product or trade for another (iron for wooden ships, or motor for horse traction); transference of an industry from one district to another (for example, the movement of shipbuilding from the Thames to the north), and many similar changes. The common effect of such changes, which are inevitable in a progressive industrial system, is to make unsaleable some form of special skill or experience which was formerly in demand.

5. **A ‘ Reserve of Labour.’**—Irregular variations in the demand of individual employers for workpeople, necessitate and produce a standing ‘ reserve of labour ’ or ‘ margin of idleness ’ as an integral part of industry. This is most marked in certain occupations—especially dock and wharf labour—where casual employment is the rule, and where to provide for his varying needs each employer retains his more or less separate ‘ pool ’ of labour, the whole of the pools never being absorbed

at the same time. In Liverpool, for instance, it is estimated that there are some 30,000 men seeking and getting occasional work at the waterside, though never more than 20,000 are required for the whole work of the port on its busiest day. In London the reserve is probably even greater. Though, however, casual employment is most marked in dock and wharf labour and certain related transport industries, it is to be found to some extent in most industries, and the existence of a reserve of labour even in the most skilled and organized occupations is indicated by the irreducible minimum of one or two per cent. returned as unemployed by the Trade Unions. The existence of such a 'reserve of labour' does not necessarily involve distress. The wages in the trade may be sufficient to provide, on an average, for each man's idle time as well as for his working time; or, as in the case of the Trade Unions, the men who for the time are standing idle may be receiving benefit at the cost of the trade as a whole; or, as in coal-mining, the idleness of the trade may be fairly evenly distributed over all the members of the trade, variations of the demand for labour in each place being met mainly by varying the length of the working week, and not by discharge or engagement of individual men. Where, however, as at the docks, the reserve is very large and the employment very irregular, there results a state of 'chronic under-employment,' which was described at length by both the Majority and the Minority of the Royal Commission on the Poor Laws and Relief of Distress, as being perhaps the greatest of all causes of pauperism and distress.

6. **Other Factors in the Problem.**—Besides the abovementioned factors in the problem of unemployment, many others have to be considered, and in particular—(*a*) deficiencies in industrial training, and the use of youthful workers in temporary and uneducative employments, with the consequent tendency to overstock the unskilled

labour market; (*b*) the possible influence of industrial development on the one hand, and of such legislation as the Workmen's Compensation Act on the other hand, in raising the standard of employers' requirements, and causing the earlier discharge of elderly or physically handicapped workpeople; (*c*) exceptional dislocations, such as may result from a general strike or lock-out in some principal industry—for example, coal-mining or railway transport. Finally, there have to be mentioned the real though not very numerous class of men who, by reason of personal deficiencies, whether of physique or intelligence or character, are substantially 'unemployable.' These include the 20,000 to 30,000 habitual vagrants who, through good times and bad times, are always on the road.

7. **Remedial Measures.**—The measures taken for dealing with unemployment in this country, till within the last few years, have been measures of relief, either by special charitable funds (of which the best known was the Mansion House Fund of 1887); or by provision of municipal relief work (a plan popularized by a Local Government Board circular in 1886, and brought under some degree of organization by the Unemployed Workmen Act of 1905); or by special treatment under the Poor Law (outdoor relief under labour test in stone-yards, etc.). In other countries, though similar methods are by no means unknown (municipal relief work, for instance, is common in Germany at each period of industrial depression), greater emphasis has been laid on Labour Exchanges and on insurance against unemployment. Direct voluntary insurance of individual workmen has been tried in Cologne, Leipzig, Basel, and Bern, without, however, achieving anything but a very limited and doubtful success in any case. Direct compulsory insurance was tried and failed completely and immediately at St. Gall, through obvious defects in the scheme. The payment of subsidies to voluntary associa-

tions which provide for their unemployed members has been tried by municipalities in Belgium, Holland, Switzerland, and Germany, and by the National Governments in France, Denmark, and Norway. The method has been most widely adopted in the first named of these countries, and from the place of its origin there it is commonly described as the 'Ghent system.' Though, however, it has had a considerable amount of success, it is by its nature confined to the organized and, as a rule, skilled trades.

The investigations of the Royal Commission on the Poor Laws and Relief of Distress (1905–9) led to emphatic condemnation of the various methods hitherto adopted in this country, and particularly of relief work, and to the outlining of an alternative policy, in which unemployment should be treated not as an unforeseen and unforeseeable emergency, but as a normal and recurring incident of industrial life. There is no prospect of abolishing all seasonal and cyclical fluctuations of employment; changes of industrial structure will cease only when industrial growth ceases; 'chronic under-employment' can only be remedied by organization of the 'reserve of labour' as between different employers, and is only intensified by relief. The general policy, therefore, which with differences of emphasis and form underlies the recommendations of both the Majority and the Minority Reports of the Commission, is a policy, first, of organizing the labour market so as to reduce discontinuity of employment to its minimum; and second, of providing insurance for such discontinuity of employment as cannot be prevented. The main proposals of the two Reports are as follows:—

(1.) The establishment of a national system of Labour Exchanges, in order to shorten the intervals between one job and the next; to prevent unnecessary tramping in search of work; to assist the 'dovetailing' of seasonal trades, and the proper guidance of boys and girls in the choice of careers; to supply the machinery of 'decasualization;' and to serve as the first step to all further reforms by providing information as to the extent and character of unemployment in all its forms. To this proposal effect has already been given by the passage of the Labour Exchanges Act, 1909, and the establishment thereunder by the Board of Trade of a connected system of about four hundred Labour Exchanges, covering the whole of the United Kingdom (see LABOUR EXCHANGES).

(2.) The development of insurance against unemployment. Here there was some difference between the two reports—the Majority desiring a general scheme of insurance, to embrace organized and unorganized workers alike; while the Minority distinctly deprecated such a scheme, and wished to confine State action in regard to insurance to the subsidizing of Trade Unions which provided unemployment benefits to their members (the 'Ghent system'). The scheme of unemployment insurance actually adopted by the Government, and embodied in Part II. of the National Insurance Act, combines, in a sense, the principles of both reports, but proceeds on lines of its own. It provides, on the one hand, for compulsory contributory insurance in certain scheduled trades, with power to extend the schedule; and, on the other hand, for the encouragement of voluntary insurance through associations in all trades (by State subsidies proportional to the benefits provided). The compulsory section of the scheme is the most important and the most novel, its main features being as follows:—

(*a*) It applies compulsorily to all workmen over sixteen and their employers in certain scheduled trades —namely, building, construction of works, engineering, shipbuilding, construction of vehicles, ironfounding, and sawmilling (in connection with or of a kind commonly done in connection with any of the other insured trades). That is to say, all workmen, skilled or unskilled, organized or unorganized, and their employers will be compelled to pay contributions in respect of unemployment in these trades, and workmen who have thus contributed will be entitled, subject to the conditions of the Act, to weekly allowances when unemployed.

(*b*) The contributions are 2½d. from the workman and 2½d. from the employer for each period of employment of a week or less, provided that for a day or less of employment the contribution is 1d. from each, and for not more than two days, but more than one day, of employment it is 2d. from each. In the case of workmen between sixteen and eighteen the contribution is 1d. each for a week or less. These contributions will be paid by the employers purchasing and affixing to an unemployment book carried by the workman a special insurance stamp representing the joint contribution; the employer will then be entitled to deduct the workman's contribution from the latter's wages. No contributions are payable while a workman is unemployed for any cause. The State will contribute one-third of all the sums received from employers and workmen—that is, one-fourth of the total income of the Unemployment Fund. Various refunds from the normal contributions are allowed to employers and workmen, with a view to encouraging regularity of employment.

(*c*) The benefits are seven shillings for each week of unemployment after the first week (for which no benefit is paid), up to a maximum of fifteen weeks in any twelve months. It is further provided that no man may have more than one week of benefit for every five contributions paid by him. This rule serves the double purpose of protecting the fund from being drained by men who are chronically unemployed, and of adjusting the claims of men who work partly in an insured trade and partly outside it; such men will get benefits in proportion to their contributions. To obtain benefit, a workman must fulfil certain statutory conditions, of which the most important are that he should be unemployed, capable of work, and unable to obtain suitable employment; and must be free of certain disqualifications, of which the most important are the disqualification of men thrown out by a trade dispute, and the disqualification (for six weeks) of men dismissed through misconduct or leaving work voluntarily without just cause.

(*d*) The scheme will be administered by the Board of Trade, in conjunction with the system of Labour Exchanges mentioned above, and the benefits will, as a rule, be paid out through a Labour Exchange (or other local office of like nature), the workman being required when unemployed to lodge his unemployment book at an Exchange, and attend there regularly to sign an 'unemployed register' in working hours, as evidence of being unemployed. Arrangements may, however, be made for the members of any Trade Union or other association of workmen which provides out-of-work benefits, in lieu of drawing the statutory benefits from a Labour Exchange, to draw from the association such benefits as the association provides, and subject to its rules, the association subsequently recovering from the Board of Trade the amount which these members could have drawn directly through an Exchange.

The voluntary section of the scheme provides for a grant from State funds of one-sixth of the amount expended by any association in payments (not exceeding twelve shillings a week) to persons whilst unemployed, exclusive, in the case of associations of workmen in the insured trades, of any sums recovered from the Unemployment Fund under an arrangement, as described in the preceding paragraph.

The scheme came into force as regards contributions on July 15, 1912, but no benefits are payable till six months after. It is estimated that 2,500,000 workmen will be included in the compulsory section of the scheme at the outset, and that the annual income of the Unemployment Fund will be about £2,800,000.

(3.) The provision of maintenance in training institutions and colonies, as an alternative both to relief work and to the ordinary workhouse for the able-bodied unemployed.

(4.) The establishment of detention colonies, as a last resort for dealing with those who either refuse to comply with the regulations of the voluntary training institution or colony, or, as vagrants or beggars, become a public nuisance.

To these proposals, which are more or less common to both Reports, the Minority added proposals for smoothing out the effects of cyclical fluctuation by the systematic undertaking of large public works in times of depression, and for shortening the permissible hours of work of boys and girls up to eighteen. They recommended also that, to ensure 'decasualization,' the use of the Labour Exchange should be made compulsory for all employments of less than a month's duration.

No steps have yet been taken directly to carry out any of the above recommendations (other than those for Labour Exchanges and Unemployment Insurance), but it is probable that the provisions of the National Insurance Act will tend, indirectly, to promote 'decasualization' by employers, with a view to diminishing their contributions.

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Unionism, Industrial. See NEW LABOUR MOVEMENTS.

WAGES.

1. *Definitions.*
2. *The Theory of Wages.*
3. *Statistics.*
    - (1.) *Current.*
    - (2.) *Comparative.*
4. *Bibliography.*

1. **Definitions.**—*Wages* are payments made by employers to persons who work under their instructions. Wages are the remuneration for labour, as contrasted with profits, interest, and rent, which accrue respectively to the directors of industry (*entrepreneurs*), to the owners of capital, and to the owners of land. In ordinary speech, the term ' wages ' is used for payment of manual labour, and the term ' salaries ' for payments for clerical and mental labour. In economics, wages are generally taken as the wider term, including salaries. Wages may be paid either for services in a given time (hour, week, month, or year), and are then called ' time-wages ' or ' time-rates,' or for a given quantity of work —' piece-wages ' or ' piece-rates.' The term ' earnings ' is properly used for the aggregate received in any period, whatever the method of payment; but pieceworkers generally speak of their ' weekly earnings,' while time-workers speak of their ' weekly wages.' The distinction between time-rates and piece-rates is more apparent than real, for it is very generally the case that a fairly definite amount of work is expected in an hour or day when time-rates are paid; and, on the

other hand, piece-rates are commonly fixed and accepted with a view to the amount that an ordinary worker can earn in a week. The method of payment is determined by convenience and custom rather than on any general principle. Piece-rates are suitable where the work is readily measured, as in simple machine production; where supervision is difficult, as in coal-mines; or where rapidity of work is needed, as in harvesting. Time-wages are suitable where the work is responsible (overseers), continually supervised (unskilled labour generally), or not easily measured (railways, domestic service, or gardening). It is supposed that piece-rates give more scope for energy and skill, and lead to greater variation of earnings than do time-rates; but time-rates, in fact, vary greatly according to the effectiveness of the worker. There are several methods of combining piece and time-rates—for example, in engineering a job may be rated as equivalent to so many hours' work, and an extra payment made if time is saved (*bonus* or *premium*); in coal-mines, from the current year (1912), it is arranged that the daily earnings of pieceworkers shall not be below a certain *minimum.*

Wages are generally paid to an individual for his services, but in some cases are paid to a group for their joint production (*collective* wage), and are then divided among the members by some fixed rules (for example, in quarries); in other cases the principal employer pays piece-rates to a skilled operative, who engages and pays the assistants he needs on a time basis (for example, spinners and piecers in the cotton industry). Where there is any system of co-partnership or profit-sharing, or produce-sharing, part of the remuneration of the worker is no longer wages, but must be analyzed under profits; this is to be distinguished from the settling of wages on a *sliding-scale*, based on the prices realized by the product (in iron manufacture and some coal-mines). *Standard* wages or rates are those agreed on and paid in particular districts and trades.

Wages are distinguished as *money* wages, *nominal* wages, and *real* wages. *Money* wages include all sums paid in return for labour—immediately, or deferred as pensions. *Nominal* wages include money wages and, in addition, payments in kind—food, lodging, uniform, perquisites, tips, facilities for purchasing goods below the market price (for example, cloth or coal), houses or land at less than the commercial rent, and any similar advantages. Nominal wages should be reckoned over a period sufficiently long to allow for seasonal fluctuations, and to include special earnings, as at harvest. All facilities, reductions in prices, and perquisites should be reckoned in their cash value to the worker; the value of these, the actual cash payments, and the present value of deferred payments, less all necessary expenses for tools, materials, and travelling, together make nominal wages. A very difficult question arises as to whether any part of house-rent should be deducted from money wages to obtain nominal wages, when a worker is obliged to live in an expensive district; such expense can hardly be separated from the cost of travelling, which is often alternative to it. In brief, nominal wages are the net money value of all advantages, less disadvantages, accruing to the worker because of his employment. In comparing the nominal wages of different occupations, regard should be had to facilities for subsidiary earnings on the part of the worker's family, to the general regularity of employment, and to the number of working years that can generally be spent in the occupation. *Real* wages consist of the commodities or goods that can be obtained by the expenditure of nominal wages; they contain the two factors of money and purchasing power. If nominal wages are unchanged, real wages rise and fall as prices fall and rise. The measurement of real wages is extremely difficult, even in theory, since it needs the adoption of some standard of expenditure; it is more difficult in practice, since the determination of retail prices and their changes has, so far, been beyond the skill of statisticians. Nevertheless, no comparison of wages, whether between place and place or one period and another, is valid till the differences of purchasing power have been taken into account. (The terms money, nominal, and real wages are not used in precisely the same sense by all writers.)

Efficiency wages are wages measured with reference to the ability and efficiency required of the worker: a practical example is found in the case of cotton piece-rates, which are arranged so as to give the same earnings for the same effort on different machines.

2. **The Theory of Wages.**—By the theory of wages is here meant an analysis of the causes which determine the rates of wages in the existing condition of industrial nations. As generally in economics, theory explains what is, without reference to what ought to be. For purposes of analysis, some assumptions are made which are not completely realized in actual affairs, but their validity is easily examined in particular cases, and corrections can be made where necessary in application to special problems. Production of commodities needs the application of labour to capital and land, where capital means the total of goods already produced by the former application of labour and still in existence; and land means the total of the resources furnished by Nature. It is assumed that all capital and land is owned, whether by individuals, or groups, or communities. Labour is that action of man which produces utilities, material or immaterial, which are exchangeable or saleable, and have value in exchange. The bringing together of labour, capital, and land for purposes of production is not, in general, undertaken by either labourer, capitalist, or landowner, but by a

man or group of men who hope to make profit. These *entrepreneurs* may, in fact, own capital, or land, or offer their own labour, just as the labourer may own capital or land; but it is convenient to speak of *entrepreneurs*, labourers, capitalists, and landlords as persons exercising different functions and remunerated in different ways, unless we are concerned in reckoning up the whole income of individuals.

It is assumed that land, capital, and labour can be hired, and that *entrepreneurs* can combine them without restriction in any way and in any quantities to produce whatever commodities they please. At any particular time the great part of land, capital, and labour are already combined, specialized, and utilized; but there is some land which can readily be diverted from one use to another, some flow of new capital not fixed, and a new generation of labour rising which can be directed, and existing labour which can be moved. The individual *entrepreneur*, whether he be promoting a new company or considering rearrangements in a small factory, is guided by his anticipations (sound or faulty) of the demand for the goods he intends to produce in deciding what combination of land in different situations, capital goods of various classes, and labour of different grades, at the prices for which he can obtain them, is likely to produce most profit. Many landowners, and the great majority of capitalists, are willing to lend their capital, and let or sell their land to the highest bidder, without reserve price; and, in general, very little capital or land is unused for any length of time. Workmen are willing to sell their labour to the employer who offers the highest nominal wages, but generally have a reserve price, which may be the lowest wage on which they can subsist, or may be determined by a standard they hope to preserve or attain. Since mankind has always unsatisfied wants which can be met by industrial or other production, and since, in modern times, land and capital are very adaptable, and the technique of production is so developed as to produce required results by very varying combinations of labour and capital, there is, in theory at any rate, always a possibility of employment of the great bulk of labour at some wage or other, but not necessarily at as high a wage as the labourer will accept or can live on. The less of any of the factors of production (land, capital, labour of various grades and aptitudes) that is available, the higher the price at which the whole will be employed ; for where there is any scarcity, only the more urgent wants will be satisfied, and a higher price will be paid by the purchasers of the commodities produced than can be obtained when the market is flooded and less willing purchasers have to be attracted. As land is fixed in position, capital and labour must be mobile, if all land is to be used ; the greater the mobility, the larger is the range of wants that can be satisfied, and the higher is the rate of remuneration.

We may summarize the argument as regards labour so far by saying that there is, theoretically, a demand for labour of every kind if it is mobile over a sufficiently wide area, and if time is allowed for adaptation of productive methods, at a rate of wages which depends on the amount of available labour, and falls as the amount increases. (A condition of society can easily be imagined where the rate would fall to zero before all the labour was employed ; but in ordinary times, in modern industrial nations, zero is not reached except temporarily, and except in particular specialized occupations where the labour is immobile.)

There can be only one rate of real wages for any particular kind of labour throughout a district within which any part of that labour is mobile, for otherwise labourers would be attracted to the region where the higher rate prevailed. There are very many classes of labourers, differing in sex, age, efficiency, knowledge, and skill, which do not compete with each other directly. In arranging methods of production, an *entrepreneur* can, within wide limits, employ these classes in various proportions; thus he can use unskilled labour on simple machinery, or skilled for difficult handwork or on more delicate machines; he can employ boys, women, or girls on similar work. After a certain stage, the more of any class he employs the less the increment to the product (for example, ten agricultural labourers may be necessary for the ordinary work of a large farm; work might be found for an eleventh, but not of a kind so valuable to the farmer, but the wage of each of the eleven would have to be the same); he must decide how much an increase in the numbers in any class will increase the value of his aggregate product, and he can pay that rate of wages to each of the members of each class which equals the value of the product that would be lost by the absence of a member. The members of each class can obtain the maximum rate at which he can employ the whole class. If they demand a higher rate, some will be unemployed. Conversely, if they restrict by any means the number of applicants, a higher rate can be obtained. If, however, they are at a disadvantage in bargaining, either through ignorance, necessity, or fear, they may not obtain the highest rate the employer would be willing to pay rather than do without them. The rate at which the whole of a class can be employed by a group of *entrepreneurs* is called the *marginal wage* of that class, because it can be measured at the margin of employment by considering how much product would be lost per man if a small group were removed; the value of this product is called the marginal value.

Supposing equal bargaining power throughout, and all members of all classes employed, the marginal value corresponding to each class in an industry thus equals the marginal wage of that class. If the rate in one occupation is thirty-six shillings per week and in another eighteen shillings, it follows that the removal of one (or a small group) of the first class would diminish the value of the aggregate product per week by twice as much as the removal of one (or an equal small group) of the second class. The argument applies equally through all grades of employment, from the salaried manager to the errand boy. In this sense the wages of all persons are said to equal 'what they are worth.'

It readily follows that rates of wages depend on (1) the productivity of the worker, (2) the number of the class of workers within which there is direct competition, (3) the bargaining power of the class of workers. They further depend, ultimately, on the conditions that determine the value of the products and the demand for labour, a discussion of which would involve the whole theory of political economy. (1.) The productivity of the worker increases with his physical strength, health, adaptability and resourcefulness, trustworthiness, education, knowledge, skill, rapidity, and alertness—that is, with a group of mental and physical characteristics which are, of course, of various importance in different occupations. We may add the less definitely economic considerations that contentment and good understanding between employers and employed increase productivity. (2.) The number in any class depends on the size of the population from which the class is recruited (children commonly follow occupations of the same general nature as their parents), and is limited by the difficulty or expense of acquiring the skill or knowledge needed, and by the rareness of the physical or mental qualities that find scope in the class. If, by the improvement of education, training, or physique, the numbers in a class increase, the marginal value and the marginal rate fall, and may fall to the subsistence level necessary to maintain efficiency in the class, and even cause a general deterioration of the class. Thus it is quite conceivable that clerical skill should become so common as to bring its marginal rate to that of unskilled labour requiring strength. To preserve a rate at which mental and physical powers can be maintained, it may be necessary to limit admission to an occupation artificially. Rarity of special skill does not necessarily correspond to a high marginal rate, for the product may not be in demand, or the skill may have been rendered unnecessary by machinery; thus scholars may find no work, and craftsmen may often been superseded. Rates of wages do not correspond to any preconceived idea of the intrinsic value of work, nor are they determined directly by reference to any standard of living. They cannot, in general, fall below subsistence level, except locally and temporarily, for labourers would then cease to exist; very generally, in modern industrial countries, they are well above subsistence level, since marginal productivity is high enough for a rising standard of life. There are, however, occupations carried on to a considerable extent, especially by women, whose livelihood is partly assured otherwise, where there is nothing to prevent wages being below the subsistence level of persons entirely dependent on wages. (3.) The individual workman is often at a disadvantage in wage bargaining, since he has no ready means of ascertaining the marginal rate of his labour, and might be willing to accept a lower rate rather than earn nothing. The commodity he offers, his labour, only exists if he uses it; he cannot hold it up for a higher price, and he himself may have little reserve fund, and must then sell his labour or soon starve. Again, in the case of unskilled labour, whether manual or clerical, there is often (but not always) a number unemployed at any particular time ready to compete for work; and, generally, the individual can easily be replaced if he shows himself discontented. Workmen may, therefore, be paid below the marginal rate; but, however scarce labour is, they can very rarely be paid above it, for no employer is willing to pay for labour more than he thinks it produces. Where workmen are combined in a Trade Union and bargains are made collectively, the employer and employed may meet on equal terms as regards knowledge; and the staying power of the Union may be greater than that of the employer, who may have fixed expenses to meet, which can only be done by continuous production. If the rate is fixed too high, some members of the Union will not find work. In rare cases the Unions may temporarily diminish profits below their position of equilibrium, if capital and business skill cannot be readily withdrawn from the enterprise concerned. Where the co-operation of a special group of workmen is necessary for the carrying out of work, and they have an effective monopoly, they may be able to raise their wages by depressing the marginal rates of other groups; and there may be other temporary and exceptional cases. Combination of employers, on the other hand, increases their bargaining power also.

It is commonly said that women are at a special disadvantage in bargaining; this is the case so far as they are not prone to collective bargaining, and so far as custom, which sometimes overrides economic tendencies, dictates that a woman's wage should be regarded as supplementary to a man's wage. The apparent lowness in many cases of women's wages is probably due to a large supply of unskilled labour, with low marginal productivity. The possibility of substituting machinery or another class of labour commonly influences the marginal rate, and especially does so in many classes of women's work. Where open competition prevails completely over custom, women are paid at the same rates for the same product as men (for example, in cotton-weaving), with, in some cases, a slight differentiation against them, for the reason that men are more able to undertake supplementary work (for example, rectifying machinery and lifting weights). If rates were unequal, employers would increase the number of the cheaper workers relative to the dearer till equilibrium was attained. There are, however, very few cases where men and women do exactly the same work; the process of the division of labour decides otherwise. It is sometimes supposed that factory legislation, regulating the hours and conditions of women's work, handicaps them relatively to men in respect of wages, but no conclusive evidence has been given in support of this view.

A low rate of wages involves a low standard of living and of mental and physical power, and a consequent low rate of productivity; whereas, if the rate can be raised by fortunate circumstances or even artificially, it reacts on the productive power of the workers, if well spent, and increases the marginal product, thus justifying itself. Conversely, a falling rate has cumulative effects in diminishing efficiency. Either effect is also cumulative over a long period, for well-paid parents can nourish and educate their children so as to be competent earners when they grow up. This chain of causation is the main economic argument in favour of the possible success of the establishment of a minimum wage, where rates have been below an efficiency level, and is the main economic justification for the Trade Union policy of maintaining a standard rate when it is once established, even at the cost of supporting unemployed. Observation shows that productivity is closely related to real earnings between competing groups of different nations. In modern industry, where men are tending expensive machines, it pays the employer best to employ the most efficient workmen, so as to get the most out of the machines, and it is worth while to train men and give high wages for this purpose. This principle is known as the economy of high wages.

So far, we have assumed that the supply of workers is fixed in definite classes without reference to the mobility of labour from one class to another. But when the marginal rates are temporarily established, so that the *real net efficiency earnings* (that is, earnings expressed in purchasing power, allowing for all the advantages and disadvantages of the occupation, and measured in relation to the effort required) differ, there is an attraction to the more favourable industry; this most commonly happens when, owing to a change in demand or to the progress of invention, the value of the product rises, and with it the marginal wage. Persons who can adapt themselves to the growing trade turn to it, and the supply of new young labour is directed towards it, while failing trades cease to draw recruits. The rapid way in which new demands can be met (illustrated by the appearance, for example, of caddies, motor-drivers, electricians) shows that the mobility is effective. Similarly, there is a tendency towards equalization between two countries when a stream of migration is established. Earnings thus tend to a certain equality, not only within classes where competition is direct, but as between non-competitive classes. At the same time, from the point of view of *entrepreneurs* as a whole, the marginal product corresponding to a given amount of wages of all persons in a country within which competition is effective tends to have the same value; for if £10 spent in wages produced a greater return in industry A than in industry B, capital would be diverted from B to A. Equality of efficiency earnings is checked when legal or other obstacles prevent free entrance to an industry. Mobility from an occupation in one industry to a similar occupation in another is called *horizontal*, and readily takes place; mobility from one occupation to another which requires greater skill is called *vertical*, and needs time and training.

The value of the whole product of an industrial or other undertaking is the source from which materials, wages, profits, interest, and rent are paid. If we suppose workmen taken on in successive small groups, the first group add more value to the raw material than they receive in wages; with successive groups the difference becomes less and less, till with the last group the added value equals wages. The aggregate difference is available for profits, interest, and rent. By competition between *entrepreneurs*, between capitalists, and between landowners, the various industries will grow to such extents that in all of them profits are equal (for the same skill of management), and rates of interest the same (for the same degrees of risk); while rent is maximized by the application of land to the purpose where the value of the product is greatest. Since, in many cases, labour can be replaced by increased application of machinery, and in some saved by the use of further land, it follows that wages, interest, and rent are connected, so that a given sum spent on labour, or as interest, or as rent, tends to yield the same return to the *entrepreneur*, for otherwise the sum will be diverted to the factor which is the more profitable. This is the *principle or law of substitution.* It follows that neither wages, interest, nor rent are settled artificially, but are determined by complicated actions and reactions. Profits are limited by the fact that, within certain limits, persons can choose whether they shall be employers or employed, and higher profits attract persons to undertake the risks of hiring land, capital, and labour, and becoming *entrepreneurs*.

Wages, being generally paid before the goods produced reach the consumers (in the case of capital undertakings, such as railways, sometimes years before), are drawn from existing capital. In the *Wages Fund*

Theory, believed by English economists in the earlier part of last century, it was held that at any particular time there was a definite amount of capital goods (food, clothing, materials, etc.) available for the remuneration of labour, which could not be increased, and that the total of wages must equal this amount, and it was impossible for wages to rise; but most goods are equally available for consumption by labourers or landowners and capitalists, and would, therefore, be diverted from the owners of one factor of production to another if equilibrium was disturbed, and the supply of most goods can be very rapidly increased or diminished, so that the wages fund is extremely elastic. If the wages fund is supposed to consist of money, the theory is equally false, since the supply of money is influenced by rapidity of circulation, which can be increased, and by the existence of credit, which is elastic. The theory, with its supposed consequences, is now completely discredited. An equally erroneous theory is not uncommonly held by uneducated persons, which economists call the *Work Fund Theory*. It is held that at any particular time there is a definite amount of work ready to be done and paid for, and that, if one man does more than the normal, some other has less to do. This is sometimes true of the demand for particular kinds of work locally and temporarily or at an assigned wage, but it has been shown above that forces tend to be called into action to absorb all existing labour if the wages are elastic. If, in consequence of the belief, work is done slowly or badly, and so made dear, the effective demand for work is checked, and rates of wages fall or unemployment is caused. If damage is done with a view to making work, employment is merely diverted from new production to repairs.

While wages are not limited in any permanent sense by the amount of existing capital, there is an intimate relation between the growth of capital and rates of wages. If any factor of production increases in quantity, its rate of remuneration falls, total production is increased, and a larger share is available for the other factors. Put in other words, if more capital or land was available, the demand for labour would be stronger, and real wages would rise as a whole. In detail, where the use of new capital competed with labour (by the substitution of machine processes), nominal wages would fall temporarily, till demand for the goods produced was stimulated by the lower price, or till labour was diverted. Thus, when capital is growing faster than population, real wages tend to rise, as has been the case, with few interruptions, in England during the last two generations. It has been held that rent, interest, and profit are each determined by definite laws, and that the result of progress in power of production accrues as real wages to labour; but more modern analyses show that there is no residuum unappropriated, and that land, capital, enterprise, and labour compete on definite terms, each obtaining its marginal value.

The *Iron Law of Wages*, expounded by German Socialists about 1860, states that wages, under a capitalistic regime and a competitive system of supply and demand, must always fall to the minimum necessary for the maintenance and reproduction of labourers. If wages rose above this level, population would increase till they returned to it; if wages fell below it, population would be checked. That this law is not applicable to the past hundred years is shown by the great rise in the standard of living in industrial nations. We do not deal here with the theories, based in part on this iron law, that landowners and capitalists, possessing the means of production, can force down wages to subsistence level, and take the surplus product, or that labour has the right to the whole product of industry, since that part which is not contradicted by the above

SUMMARY OF RESULTS OF THE BOARD OF TRADE INQUIRY AS TO EARNINGS IN THE UNITED KINGDOM IN 1906–7.

(So far as published up to June 1912.)

INDUSTRY.	Percentage numbers of Persons working *full time* whose Earnings in a week in September 1906 were within certain limits, and their Average Earnings.								All Employed —whether full, over, or under time.
	MEN (over 20 years of age).								
	Under 20s.	20s. and under 25s.	25s. and under 30s.	30s. and under 35s.	35s. and under 40s.	40s. and under 50s.	50s. and over.	Average Earnings.	Average Earnings.
Cotton	16·0	24·4	19·3	12·6	8·7	14·4	4·6	29s. 6d.	29s. 4d.
Woollen and Worsted . . .	15·2	31·6	20·6	19·7	6·5	4·1	2·3	26s. 10d.	25s. 11d.
All Textile Industries . . .	18·4	27·2	19·1	13·8	7·5	9·6	4·4	28s. 1d.	27s. 3d.
Tailoring (*Bespoke*) . . .	5·1	19·7	21·3	20·9	10·9	11·6	10·5	33s. 6d.	29s. 7d.
Boot and Shoe (*Ready-made*) .	6·5	18·9	33·5	26·4	8·0	5·2	1·5	28s. 8d.	26s. 4d.
All Clothing Industries . .	7·2	20·0	27·2	23·0	9·7	8·3	4·6	30s. 2d.	28s. 3d.
Building Trades	4·0	15·5	17·6	15·8	29·3	15·2	2·6	33s. 0d.	31s. 6d.
Public Utility Services . .	12·0	25·4	24·3	18·2	10·8	7·6	1·7	28s. 1d.	27s. 0d.
Metal, Engineering, and Shipbuilding	7·6	17·9	15·5	17·0	19·2	13·9	8·9	33s. 11d.	32s. 3d.
Weekly Rates. .	25·9	37·1	17·7	10·3	3·5	5·0	0·5	24s. 4d.	..
Railways (Oct. 1907) Earnings .	21·6	28·1	21·8	13·5	6·3	5·5	3·2	..	26s. 8d.
All the above-named Industries together (computed) . . .	11·1	22·4	18·3	16·0	16·1	11·4	4·7	30s. 9d.	30s. 1d.

INDUSTRY.	WOMEN (over 18 years of age).							Average Earnings of all Women employed.
	Under 10s.	10s. and under 15s.	15s. and under 20s.	20s. and under 25s.	25s. and under 30s.	30s. and over.	Average Earnings.	
Cotton	3·0	20·9	35·4	29·9	9·6	1·2	18s. 8d.	18s. 3d.
Woollen and Worsted	10·7	55·6	24·7	7·6	1·2	0·2	13s. 10d.	13s. 4d.
Linen	41·7	49·1	8·5	0·6	0·1	0·0	10s. 9d.	10s. 6d.
All Textile Industries	13·3	38·8	26·9	15·8	4·6	0·6	15s. 5d.	14s. 10d.
Dress, Millinery, etc. (*Workshop*)	28·0	36·2	21·1	8·4	2·6	3·7	13s. 10d.	13s. 7d.
Shirt, Underclothing, etc.	22·2	46·0	23·5	6·1	1·4	0·8	13s. 4d.	12s. 10d.
Tailoring (*Ready-made*)	24·0	46·6	22·5	5·5	1·1	0·3	12s. 11d.	12s. 6d.
Laundry (*Factory*)	20·5	52·0	21·1	4·7	1·0	0·7	12s. 10d.	12s. 4d.
All Clothing Trades included in the Returns	21·6	45·1	23·2	6·8	1·7	1·6	13s. 6d.	13s. 0d.
	LADS (under 20 years of age).							Full-timers.
	Under 5s.		5s. and under 10s.	10s. and under 15s.	15s. and under 20s.	20s. and over.	Average Earners, Full-timers.	
	Half-timers.	Full-timers.						
Textile Industries	11·5	1·0	33·3	37·2	13·6	3·4	11s. 4d.	11s. 3d.
Clothing Industries	0·4	8·9	46·5	27·4	13·8	3·0	9s. 8d.	9s. 7d.
Building Trades	0·0	10·9	46·1	26·6	10·5	5·9	9s. 6d.	9s. 11d.
Engineering Trades	0·0	6·2	47·8	28·8	11·5	5·7	10s. 4d.	10s. 7d.
	GIRLS (under 18 years of age).							
Textile Industries	11·2	4·3	48·7	27·6	6·3	1·9	9s. 7d.	9s. 5d.
Clothing Industries	0·3	37·8	52·6	8·4	0·8	0·1	5s. 9d.	5s. 9d.

NOTES TO TABLE ON PAGES 508–9.

Textile industries include cotton, wool, worsted, linen, silk, jute, hosiery, lace, carpet, hemp, smallwares, flock and shoddy, elastic web, hair, fustian, bleaching and printing.

Clothing industries include dress, millinery, etc. (workshop and factory), shirt, blouse, underclothing, etc., tailoring (bespoke and ready-made), boot and shoe (ready-made, bespoke, and repairs), silk and felt hats, leather glove, corset (factory), fur, straw hat and bonnet, other clothing, dyeing and cleaning, laundry (factory and workshop).

Building trades include building, construction of harbours, etc., saw-milling, joinery and cabinet-making.

Public utility services—road and sanitary services, gas, electricity, and water supply, tramway and omnibus.

Metal industries include engineering, shipbuilding, pig-iron, iron and steel, and tinplate manufacturers, and a great number of other industries in which the work is principally in metal.

Electric railways are included in the computed total, but not in the table.

Those industries are selected for special tabulation for men and for women in which the greatest numbers are employed.

The percentages paid by piece-rates were: clothing trades—men 37, women 45; textiles—men 38, women 74; metal trades—men 67·0; building—men 1; harbours—men 10; cabinet-making—men 21. In each case the remainder were on time-rates.

The first column of average earnings and the percentages in the table relate to those persons who in the particular week of the inquiry were employed for exactly the normal week in each industry. The last column gives the average earnings of all who were employed, whether they worked full time, or overtime, or undertime. In separate trades and in detailed occupations, the differences between the two averages are in many cases important.

The line of computed averages and percentages for men in all the industries together is derived by applying the figures in the table to the total numbers employed (according to the census or factory inspectors' reports) in the various industries, and is only a rough computation. It is not given in the official reports.

No similar line is given for women, since domestic service and many other important occupations are not represented.

The principal men's occupations omitted are coal-mining, dock labour, carting, and employment in ships, and in the army and navy. It is not probable that the inclusion of these would affect the general average materially. Agriculture is not included in this table.

There is one more volume of the report still to be published.

analysis does not concern the analysis of the determinants of wages in existing society, to which this article is limited, but relates rather to the conditions of ownership. It is not possible, in the existing state of socialistic theory, to deduce how wages (if they existed) would be determined in a socialistic regime.

The *Minimum Wage*, for which there is now an agitation in the United Kingdom, refers to a standard which, in existing customs and with present prices, is held to be the least on which a workman can maintain

AGRICULTURE.—REPORT OF THE BOARD OF TRADE.

	AVERAGE WEEKLY EARNINGS IN 1907 OF				
	Ordinary Labourers.	Horsemen.	Cattlemen.	Shepherds.	All Classes together.
Northern Counties	19s. 2d.	21s. 3d.	21s. 11d.	23s. 5d.	20s. 10d.
Yorkshire, Lancashire, and Cheshire	19s. 6d.	19s. 5d.	20s. 3d.	20s. 6d.	19s. 8d.
North and West Midland Counties	18s. 3d.	18s. 6d.	19s. 0d.	19s. 9d.	18s. 7d.
South Midland and Eastern Counties	16s. 1d.	18s. 1d.	18s. 4d.	18s. 9d.	17s. 3d.
South-Eastern Counties	18s. 1d.	18s. 11d.	19s. 8d.	19s. 9d.	18s. 9d.
South-Western Counties	16s. 10d.	17s. 4d.	18s. 0d.	18s. 3d.	17s. 4d.
England as a whole	17s. 6d.	18s. 9d.	19s. 1d.	19s. 7d.	18s. 4d.
Wales and Monmouthshire	..	..	..	..	18s. 0d.
Scotland	18s. 11d.	19s. 8d.	19s. 4d.	20s. 5d.	19s. 7d.
Ireland	..	..	..	..	11s. 3d.

These averages are not of weekly cash wages, but of total earnings over the year, allowing for lost time in winter and extra payments in harvest, etc., and including the estimated value of all payments in kind.

In England weekly cash wages vary from about 12s. in Dorsetshire to 17s. 6d. in the West Riding of Yorkshire. Average earnings vary from 15s. 4d. in Norfolk to 20s. 5d. in Derbyshire.

efficiency and bring up a family to his own level. It is far above the subsistence level of the iron law, which referred rather to the level at which life could be maintained without reference to efficiency. The difference is due to the recognition of the effect of wages on productivity.

3. **Statistics**—(1.) *Current.*—The tables on pp. 508–11 show the most general information as to wages in recent years in the United Kingdom. There are no general statistics in existence as to wages in coal-mining.

(2.) *Comparative.*—A general inquiry was made as to wages by the Board of Trade in 1886; the general plan was sufficiently similar to that of 1906 to make rough comparisons possible. The weekly average for full-time work for men in a large and varied group of industries was 24s. 7d. This included coal-miners, but excluded building and railways. If we reverse this, and so make it more directly comparable with the table just given, we should get 25s. to 25s. 6d. in 1886 to be compared with 30s. 9d. in 1906—a rise of 20 p cent., or rather more. The calculation is very roug and does not allow at all accurately for the change in the relative numbers in the industries. In the same period agricultural wages rose about 14 per cent., and coal-hewers' rates about 36 per cent. The inclusion of these groups would leave the average increase at between 20 and 25 per cent. In the same period women's wages in the textile trades increased about 22 per cent. We cannot make a comparison for women in any other group on this basis, nor any valid comparison for boys or girls.

The following table exhibits various estimates of the changes of average wages in the United Kingdom since 1850. Column A shows Mr. Bowley's estimates, compiled from the *Economic Journal* (1904, p. 459), *An Elementary Manual of Statistics*, and other sources, of the general change of the average wages of the whole group of industries as to which information could be obtained, allowing for the relative growth of the various industries (thus, the diminishing importance of agriculture, where the wages are low, causes an increase in the average), but not allowing for irregularity of employment year by year. Column B shows an estimate by Mr. G. H. Wood (*Statistical Journal*, 1909, pp. 102–3) of precisely the same nature. The agreement is nearly complete, except that in B the rise from 1863 to 1868 is greater, and that from 1886 to 1892 is less, than in A. Column C shows Mr. Wood's estimate (*loc. cit.*) of the changes, if no allowance is made for the

COURSE OF NOMINAL AND OF REAL WAGES IN THE UNITED KINGDOM, 1850–1911.

(All numbers expressed as percentages of the levels in 1900.)

Year.	Nominal Wages. Estimates of Change of Average Wages of all Employed.		Nominal Wages. Estimates of Change of Average Rates for Work of the same Grade.		Food Prices in London.	Real Wages.		
	A	B	C	D	E	F	G	H
1850–1	55	56	66	..	..	..	55	50
1852	57	56	68	..	..	..	56	
1853	58	61	72	..	..	..	57	
1854	61	64	74	..	..	..	53	
1855–6	62	65	75	..	..	..	52	50
1857	63	62	72	..	..	..	53	
1858	63	61	70	..	..	..	56	
1859	63	62	70	..	..	..	57	
1860–1	63	64	72	..	..	..	56	55
1862	63	65	72	..	..	..	57	
1863	64	65	73	..	..	..	60	
1864	65	69	77	..	..	..	64	
1865	66	70	78	..	..	..	64	55
1866	68	74	81	..	..	..	64	
1867	68	73	80	..	..	..	60	
1868–9	67	73	79	..	..	..	62	
1870	71	74	81	..	..	..	65	65
1871	73	77	84	..	..	..	66	
1872	77	81	89	..	..	..	67	
1873	80	86	94	..	..	..	70	
1874	83	87	94	..	..	..	73	
1875	83	86	92	..	..	..	74	65
1876	83	85	92	..	..	..	75	
1877	82	84	90	..	151	54	73	
1878	81	83	88	85	141	57	72	
1879	77	82	86	83	135	57	75	
1880–1	77	82	86	84	141	55	74	65
1882	79	82	86	86	140	56	74	
1883	79	83	87	86	140	56	76	
1884	79	84	87	85	128	62	79	
1885	78	83	86	84	116	67	81	80
1886	77	83	86	83	110	70	83	
1887	78	83	86	83	105	74	85	
1888	80	84	86	85	105	76	86	
1889	85	87	89	88	108	79	87	
1890–1	88	91	93	91	108	82	90	90
1892–3–4	88	90	92	90	104	85	90	
1895	88	90	90	89	94	94	95	95
1896	88	91	91	90	92	96	96	
1897	89	93	93	91	96	93	96	
1898	92	93	93	93	101	91	95	
1899	95	96	96	95	96	99	99	
1900	100	100	100	100	100	100	100	100
1901	98	100	99	99	102	96	99	
1902	97	98	97	98	102	95	97	
1903	96	..	..	97	103	93	..	
1904	95	..	..	97	104	91	..	
1905	95	..	..	97	104	91	..	..
1906	97	..	..	98	103	94	..	..
1907	102	..	..	102	106	96	..	..
1908	100	..	..	101	108	92	..	..
1909	98	..	..	100	108	91	..	..
1910	99	..	..	100	108	91	..	..
1911	100	..	..	100	109	91	..	..

relative growth of trades; D gives the Labour Department's numbers, which are similar in character, but partly based on piece-rates, whereas A, B, and C are based on earnings. Comparison of B and C shows a steady gain from the growth of the better-paid occupations. E is the Labour Department's estimate of food prices in London, and is not necessarily typical of retail prices paid by the working-classes throughout the kingdom; the falls shown in 1877–84 and from 1890 to 1896, and the rise from 1896 to 1898, are probably exaggerated. F is a computation of the change of real wages on the assumptions that all wages are spent on food, and that its prices have moved, as in E; it is open to very considerable criticism, and certainly does not represent the course of real wages at all closely. G shows Mr. Wood's estimate (*loc. cit.*), allowing for his estimates of the movement of rent and retail food prices, but not other commodities. H is compiled from Palgrave's *Dictionary of Political Economy*, Appendix, p. 801 (*q.v.*), some of the numbers being modified by means of column A; it assumes that two-thirds of wages is spent in food, and that the purchasing power of the remainder is unchanged. The divergence of these columns shows the extreme difficulty of measuring real wages.

It appears certain that nominal and real wages increased from 1850 to 1874, that nominal wages fell and real wages remained steady from 1874 to 1880, that nominal wages remained steady and real wages rose from 1880 to 1887, and that both nominal and real wages rose from 1887 to 1899. The numbers relating to 1900, as compared with 1899 and 1901, are doubtful. By 1910 real wages were back at the level of 1896–8, but cannot be measured exactly. During 1911 and the first part of 1912 a great many rises in nominal wages took place, but their full effect cannot yet be computed.

Comparison even of *nominal* wages in two countries can only be made in special cases, and even in these it is extremely difficult to compare their changes. The difficulties of relative *numerical* measurements of *real* wages in two countries are almost insuperable, but there is a great deal of material for *descriptive* comparisons. (See also COST OF LIVING.)

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A. L. B.

Wages Boards. See METHODS OF INDUSTRIAL PEACE.
Wealth. See CAPITAL.
Wealth, National. See CAPITAL.
Welfare Work. See MODEL FACTORIES AND VILLAGES.

WOMEN AND CHILDREN AND THE LABOUR MARKET.

1. *Statistics.*
2. *Wages.*
3. *Trade Boards.*
4. *Juvenile Labour.*
5. *Bibliography.*

Whatever may be the truth with regard to the proper sphere of woman, it is beyond doubt that for a very large number there is no possibility of that home life which was once considered her natural rôle. We have now to take into account the fact that a vast number have to depend upon themselves for their economic support, and their position in the labour market has, therefore, become of vital importance.

1. **Statistics.**—In 1901, according to the Census, there were 16,999,000 women and girls in England and Wales—that is to say, 1,000,000 more women than men. Roughly speaking, there were about 110 women to every 100 men, and the probability is that if we had the figures for 1911 we should find a still greater disproportion in numbers. Whatever may be the cause of this surplus of women, whether it be the lower death-rate, as is generally suggested, or whether it be due to some other cause not fully explained, the fact remains that there is a surplus of women, and that many of these

women and girls have to take their share of industrial work. The number of women and girls over fifteen returned as occupied in 1901 was, approximately, 3,970,000, or 34·5 per cent. The Census figures give us very little information as to how many of these women worked occasionally and how many worked regularly. Neither is any information forthcoming as to how many women returned themselves as unoccupied who nevertheless did some casual work. The majority of women workers, it is clear, are quite young, and that constitutes the great difference between the work of men and of women. Over 90 per cent. of the men are occupied until fifty-five, and 89 per cent. from fifty-five to sixty-five. The majority of women work for a few years, and then leave to get married. Wage-earning is clearly to them only an episode in their life, and the possibility of marriage has been the great hindrance to the formation of Trade Unions amongst women. If it be true that a very large number of women fail to reach a high state of industrial efficiency, it is probably due to this cause. At the same time, it would be a mistake to underestimate the number of women who still work even after middle age. There are nearly 250,000 women who are occupied in some form of industrial work between the ages of thirty-five and forty-five, including 88,000 domestic servants, 32,000 professional women—as, for example, teachers and doctors—30,000 textile workers, and 40,000 workers in clothing and millinery. We must add to these a considerable number of women who are widows, and who are in many cases over forty.

The hard lot of many of these women is the result of their anomalous economic position. A man is supposed to be able to earn enough for himself, his wife, and children; a woman only for herself. When a woman has a family and has lost her husband, she is still able to earn only enough for herself. The lower death-rate of women is thus a real disadvantage to them, in so far as it means that they are compelled, at the very time of life when they are least capable of self-support, to work, not only for themselves, but for their children. The occupations of these widowed women of forty-five and upwards is very much that of married women who are compelled to work after that age. Of the 208,000 married or widowed women occupied between the ages of forty-five and fifty-five, 25 per cent. are charwomen and 28,000 laundresses. Up to the present there has been no attempt to compensate woman for this discrepancy, which is inherent in our economic system.

Amongst the many interesting results which will probably emerge from the Census of 1911 will be accurate figures as to the number of girls who are employed up to the age of twenty-five, who then leave work at marriage, and for whom work is a 'meantime' employment. Have these girls increased or decreased in number? Another interesting point is, whether the class of self-dependent women has increased or decreased. The probability is that it has increased, and we shall discover amongst those who are engaged in occupations between the ages of thirty-five and forty-four a larger proportion, especially of women engaged in professional occupations, domestic service, textile, and dress trades.

Perhaps the most important place in England and Wales, so far as women's employment is concerned, is Lancashire, where both women and children play a large part in the textile trade. The result is that there are proportionately fewer girls engaged in domestic service in Lancashire—only 16 per cent. between the ages of fifteen and twenty, as against 35 per cent. in England and Wales; and only 19 per cent. between the ages of twenty and twenty-five, as against 36 per cent. in England and Wales. About 44 per cent. of all women and girls in Lancashire are occupied in the great textile industries, and 12 per cent. in the making of clothes and dresses. Of girls between the ages of fifteen and twenty-five, 89·5 per cent. are occupied, by far the larger proportion being in the mills. The general result is that in all these big manufacturing towns of Lancashire the number of young persons required for the textile trades is greater than the demand; and when we remember that the day is a ten hours day, we begin to understand why there is some tendency to deterioration in the life of Lancashire women. About 23 per cent. of all women occupied in the textile trades are married or widowed, and it is generally supposed that this is the cause of the high rate of infant mortality in Lancashire. Against this it is argued that the infant mortality of Liverpool is even higher than that of Preston, but Liverpool in this connection means only the central districts—that is to say, the Registrar-General's area—which is only a little more than one-fifth of the real Liverpool. It seems clear, on the whole, that the excessive infant mortality in Lancashire is largely due to the occupations of women.

It is estimated that 1,285,000 women and girls over ten are returned as indoor servants. About 20,000 are under fourteen, and nearly 64,000 under fifteen, while 385,000 servants are between the ages of fifteen and twenty. It is often said that we suffer from a scarcity of servants. This is hardly true, or, if it be true, it is due to the fact that the wealthy employ more servants than they really require. As a matter of fact, in Germany, where there is a much larger population, the number of servants is fewer than in England.

2. **Wages.**—An examination of the wages paid to women and girls shows an extraordinary discrepancy, even for the same work, in almost every portion of England except in Lancashire. In Lancashire the

wages are, on the whole, good; but this is partly due, at all events, to the Trade Unions, which maintain a high standard. A low wage is hardly due to the fact that a woman's standard of comfort is less, or that her wage is an auxiliary one. A woman's standard of comfort is often low because her wages are low; and, so far as the auxiliary wage is concerned, it is frequently the case that married women, who do not need the highest wages, nevertheless get them. While a married woman may be able to work for a lower wage, nevertheless the fact that she is married makes her more independent, and, therefore, likely to demand a higher wage. Generally speaking, so far as the factory is concerned, married women are in responsible positions, and get better wages. This does not hold good, of course, as regards outwork, and there it must be admitted that married women often compete unfairly against those who are single. They are subsidized by the wages of the husband and the family. Even in outwork it would be true to say that widows who are the sole wage-earners of the family are the worst paid. The relative wages of women as compared with men, apart from Lancashire, when examined, point to a difference in occupation. Men are in the better-paid trades, and women, for the most part, in the low-waged trades; and the question that ought to be asked is not so much why women and men employed in good work are paid an unequal wage, but why women and men are employed at all in different groups of employment, and why a skilled woman should be paid less than an unskilled man. We can understand why women should be paid a low wage for doing an inferior class of work. What is difficult to understand is why women should receive an inferior wage when the work is not inferior. It is not because the woman produces less than the man, but because, being a woman, it is taken for granted that she ought to receive less than a man. She herself has also taken it for granted, for, when applying for positions in the labour market, so far from working for a Trade Union wage or a wage which a Trade Union would fix under the circumstances, she frequently accepts without demur the wage paid to unorganized women, who compete against one another for a position, and whose competition is made use of by employers of labour. When we have to deal with outwork, we see that the pressure put upon the woman by the stress of competition tends to drive her value in the labour market far below the ordinary level. Slowly but surely she becomes deteriorated as a worker, and her wage is subsidized by private charity or Poor Law relief. It is practically impossible for wages to go lower for this class of women than they are at present. They are still often below subsistence point, and to go lower would mean the worker would become absolutely unfit for the work.

3. **Trade Boards.**—So far as the outworkers are concerned, especially in certain trades that are sweated, it is safe to say that women occupy an inferior position because they accept a wage that is not a standard wage in any sense, but is merely a subsistence wage. The remedies for this evil are two—first, the operation of the Trade Boards Act; and, second, the formation of Trade Unions. The first means the application of State pressure. The economic factors which make possible the evil of underpayment will now have added, at least in certain trades, another factor which must be taken into account. The State steps in and fixes a standard where there has been no standard, except that of use and wont. It is conceivable that in the near future, even in the sweated trades, the organization of women will be possible. When once a standard has been fixed, that standard may be raised. For the present, at all events, the great hope of the unorganized women in those trades is the working of the Trade

Boards Act. Apart altogether from the sweated trades, a large amount of female labour, generally the labour of girls, is unskilled. It consists of such work as jam and pickle making, rope-making, sack-making, laundry work, aerated-water bottling, the manufacture of hats and corsets, fur-pulling, dyeing and cleaning, etc. The work is largely mechanical, it is more or less unskilled, and very poorly remunerated. In the clothing trade, which is now a scheduled trade under the Trade Boards Act, is seen a considerable increase of wages, although in 1908 the average wages of girls under eighteen in that employment was 5s. 9d. Specialization, the subdivision of process, and the invention of new machinery have made possible the employment on a larger scale of girls instead of women. The result is not only a deterioration in physique and *morale*, but also a liability to accident which is somewhat alarming, and a tendency for these girls to be quite unfitted to play any part in the home, whether as daughters or as wives. Generally speaking, however, we may say that the influence of factory law, the establishment of free education, and the spread of organization amongst women workers are remedying the worst evils of which we complain. All women cannot be domestic servants, even if they belong to the working classes, and it is necessary, therefore, that the remedies for the evils which we have discovered should be applied as speedily as possible. Factory Acts, Education Acts, and Trade Board Acts really express the feeling of the nation in respect of the industrial problem presented by women.

It is women who are chiefly concerned with the actual working of the Trade Boards Act passed in 1909, for it is women who belong, for the most part, to those trades which are scheduled under that Act. They are as follows: (1) Certain classes of chain-making; (2) machine-made lace and net finishing, together with the mending or darning operations of lace-curtain finishing;

(3) paper-box making; (4) ready-made and wholesale bespoke tailoring. In these trades 200,000 workers are employed, mostly women and girls, and the great majority of these workers were sweated. Certain of the operatives in the larger trades of paper-box making and wholesale tailoring belong to the aristocracy of these trades, although, of course, large numbers are in a very piteous plight as regards wages and conditions of labour. The first two trades are localized trades, and employ, almost entirely, sweated home-workers. Boards have been set up in each trade, with the result that in the Cradley Heath chain-making trade the Board, which consists of thirteen persons, has fixed a time rate of 2½d. per hour as a minimum. This seems to be an extremely low wage, and yet, low as it is, it is an advance of nearly 100 per cent. on the rates previously paid for low-grade chain. The general minimum piece rates fixed at Cradley Heath yield more than the time wage. The lace-finishing trade is chiefly found in Nottingham, and the minimum rate fixed there is 2¾d. an hour; it was increased to 3d. in October of this year (1912). This, also, is a very considerable increase on the wages previously paid. In both cases it is likely that the middleman will disappear. It will pay the employer to deal direct with his outworkers, and thus save an intermediate profit. The paper-box trade employs about 22,000 persons, 17,000 of whom would be females. A very large number are not paid more than 7s. or 8s. a week; the new minimum rate fixed is on an ascending scale, beginning with 2¾d. an hour in 1911. It is now 3d. per hour, and will be 3¼d. at the end of 1913, yielding a wage of about 14s. a week of fifty-two hours. In the worst cases the wage will be improved to the extent of 5s., 6s., or 7s. a week.

The ready-made and wholesale bespoke Tailoring Board is gradually getting into working order, and district committees have already been set up. Minimum time rates for female workers have already been paid for Great Britain in the tailoring trade—that is, in the trade concerned with the making of garments to be worn by male persons. The minimum time rates have been fixed for female workers in a factory or workshop at 3d. an hour, and the same amount for female home-workers, including workers in a domestic workshop. Female learners receive wages according to age and the length of the time that they have been engaged in the trade, beginning with 3s. per week for girls between fourteen and fifteen for the first six months, and ending with 13s. 6d. per week for girls over twenty-one during the fourth three months. The girl over fourteen and under fifteen, however, gradually increases her wage, until during the eighth six-month period of employment she will be receiving 13s. 6d. per week. The 'learners'' rates are weekly rates based on a week of fifty hours, but are subject to a proportionate deduction or increase if the hours spent in the factory or workshop are less or more than fifty. A learner ceases to be a learner at the completion of not less than three years' employment and the attainment of the age of eighteen. This would apply to girls under fifteen years of age. Between the ages of fifteen and sixteen two years' employment are necessary, and the same between the ages of sixteen and twenty-one, while those who are twenty-one years of age or over can leave the probationary stage of learner after one year's employment.

4. **Juvenile Labour.**—The question of sweated labour leads on naturally to the question of boy and girl labour, which, in a very real sense, is sweated. The desire to get an immediate profit out of the cheap labour of these boys and girls is likely to be followed by very serious results in the physical and mental unfitness of the next generation. The Majority Report and the Minority Report of the Poor Law Commission, the Report of the Consultative Committee of the Board

of Education (which dealt with continuation classes and the raising of school age in elementary schools), the Report of the London Education Committee, all bring out the fact that the working of long hours for low wages is almost universal in the case of those who leave our elementary schools at the earliest possible moment. A still more evil result, in a sense, arises from the fact that in many hundreds of cases boys and girls spend the years from fourteen to eighteen or nineteen in occupations which offer them no hope of any permanent employment, and train them for no future industry. It is clear that any legislation in the future must deal with the low wages, the long hours, the insanitary conditions of boy and girl labour, and must, at the same time, make impossible the exploitation of the juvenile workers for immediate profit, without regard to his or her future career.

The Poor Law Commissioners, in their special volume on Boy Labour, say: 'We are struck with the enormous proportion of boys (between 70 and 80 per cent.) entering unskilled occupations on leaving school. Boys of the very poor are pitchforked into working life with a more than usual lack of care, as errand-boys, as van-boys, or street-sellers.'

The return for England and Wales of the occupations of boys leaving school was published in 1899 — Elementary Schools (Children Working for Wages), Part II. This return shows that in London, out of 24,145 boys reported occupied, 10,283 became errand, cart, or boat boys; 3,584 went into shops; 964 became newsboys and street-venders; while 2,256 took to some miscellaneous and indefinite occupation. That is to say, 67 per cent. of the whole went into occupations that were distinctly 'blind-alley' occupations. In the large urban and manufacturing districts the position was somewhat better, but even there 47 per cent. took up the same class of work; while in the rural and small urban districts, out of nearly 70,000 boys, 10,000 became errand or van boys, and 7,000 went into shops. Between the ages of fourteen and eighteen there are probably in London 120,000 boys working for a living, while about 30,000 boys leave school every year at the age of fourteen to take up some work. Ignoring the boys who are unemployed or whose occupations are unknown, nearly 60 per cent. would be boys entering unskilled trades — that is to say, domestic service, transport (including telegraph boys), shop, and general labourers. Under the head of domestic service are barbers' shops, page-boys, club-boys, etc. The largest class would be transport labourers and shopkeepers. Half the boys who leave school belong to these classes. There is a very large demand for boys in such occupations. They earn considerably more than those who enter a skilled trade in the early years. High wages attract boys, because in these early years they offer the prospect of amusement and independence. They are not attracted by low wages and the certainty of a skilled trade later on.

Taking London as an example, the 30,000 boys who leave school every year have cost the State something like £100 a boy. If he is fit for nothing later on in life, and even becomes a burden on the State, that money is wholly wasted. One thing is quite certain—that the boys who enter these unskilled occupations become distinctly less valuable as individuals in the labour market after a few years' work. They may have increased in physical strength, but they have decreased in general health and vigour, and they are not wanted as soon as they begin to demand the wages of a man.

It seems that the apprenticeship system is on the decline, although it may be many years before it will cease to play a useful part. Nevertheless, the time has come for the State to reconsider the whole position, and to endeavour, as far as possible, to raise the general standard of boy labour, to increase the proportion of those who enter skilled occupations, and to raise the standard of intelligence, even for the majority who are compelled to do unskilled work. What is true of London is true of the other large towns—Liverpool, Birmingham, Glasgow, Manchester, etc. In the north of England the position of the half-timer, and in general the employment of all children, means the wastage of much good human material.

The number of half-timers seems to be increasing. Thus, education ceases practically at twelve years of age, and five or five and a half hours' daily work in a mill or factory makes it extremely difficult for these children to concentrate attention upon their educational labours in the afternoon. The evidence submitted to the Poor Law Commission effectively disproves the contention that the mill is a valuable technical institute, and that it trains boys for future careers. The fact is the very reverse, and especially in the case of boys' half-time work in the factory or mill. It does not usually lead to much better prospects of better-paid employment later on. In certain trades the young people lose their occupation at the mill soon after the age of sixteen, although this is not the case with the girls, who seem to find prospects of improving their employment in certain branches of the textile trades.

In addition to those who are engaged in half-time work, it is estimated that there are at least 200,000 children attending school full time and working out of school hours engaged in a variety of occupations, such as street-trading, milk-selling, and shop errands. These get a very small wage, not more than 2s. or 3s. a week. The half-timer's wage would average from 2s. 6d. to 5s. weekly, and this assistance to the weekly budget is, in an enormous number of cases, quite unnecessary. The difficulty in the north to a raising of the age is the opposition of the parents, who are so eager to lay their hands upon the extra few shillings which boys and girls bring in that they are willing to risk the whole future of these children as wage-earners, apart altogether from the injury that is inflicted upon their health by overpressure and overwork.

Indirectly, we have already referred to the case of children engaged in home industries. Here, again, the Parliamentary Report referred to shows that 12,646 children were engaged in piece-work, such as brush-making, basket-making, match-box making, and rag-sorting; while over 4,000 girls were employed in dressmaking, shirt-making, mantle-making, tailoring, etc. In all, about half a million children of school age, who should be spending all their time at school in acquiring a proper education, and who should be doing nothing else, are working for wages in one form or another.

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Women and Trade Unions. See TRADE UNIONS.

Workmen's Compensation. See EMPLOYERS' LIABILITY.

INDEX.

ACCIDENT (in law), 143, 144.
Administration of Factory Acts, 193, 194.
Affiliated Friendly Societies, 228–231.
Agencies for emigration, 129.
Agricultural Labourers' Union, 468.
Agricultural wages: statistics, 511.
Agriculture, improvements in, 346.
Aliens and the Insurance Act, 319
Amalgamation (in industries), 55.
American Industrial Commission, 388.
Anarchism, 363, 364.
Anarchists, motives of, 410.
Ancient Order of Shepherds, 243, 254, 255.
Apprentices, disputes with employers, 196–198.
Approved societies under the Insurance Act, 334–338.
Arbitration Boards, 385, 386.
Arbitration, compulsory, 389–391.
Arbitration in labour disputes, 155.
Arch, Joseph, 468.
Armstrong, Whitworth, and Co., Ltd., employees' interest in, 88.
Arrears under Insurance Act, 326.
Artificers, Statute of, 345.
Association of United Trades for the Protection of Labour, National, 461.
Attendance at school, 108, 111–113.
Australia—
  Compulsory arbitration in, 390.
  Emigration to, conditions of, 128.
  Factory Laws and Shop Acts in, 198–201.
  Rejection of immigrants, 126, 127.
Australia, South, Factory Laws and Shop Acts in, 198–201.
Austria, Factory Laws in, 203.
Averages, calculation of, 376–378.

BAKEHOUSES, regulations of, 191.
Barnardo's Homes, emigration work of, 131.
Beccaria on crimes and punishments, 435, 436.
Belgium—
  Factory Laws in, 203.
  Housing in, 282, 283.
Benefits, trade union (figures), 479.
Benefits from insurance against unemployment, 492.
Benefits under Health Insurance Act, 315–317, 325.
Best, Rev. Samuel, 232.
Birmingham, housing in, 280.
Black Death (1349), results of, 344.
Blackley, Canon, insurance scheme of, 310, 311.
'Blind-alley' occupations, 525, 526.
Board of Trade estimate of wages, 513–515.
Board of Trade inquiry into earnings: summary, 508, 509.

Böhm-Bawerk on capital and production, 28.
Boot and Shoe Operatives, National Society of, growth of, 470.
Booth, Right Hon. C., old age endowment scheme of, 311.
Bootmaking, transformation of, 298, 299.
Bournville, description of, 403–405.
Bourses du Travail, 409, 410.
Bowley, A. L.—
  Index numbers of, 382.
  Wages estimate of, 512, 515.
Boxted Small Holdings, 139.
Boy labour, 525–527.
Boys' Country Work Society, 140, 141.
Boys, earnings of, 509.
British Columbia, Factory Laws and Shop Acts in, 199–201.
British Medical Association and the Insurance Act, 327–333.
Budget of 1909, 313.
Builders' Union, 458.
Buildings for factories, types of, 162–170.
Burt, Right Hon. Thos., 466.

Cadbury, G., and Bournville, 403, 404.
Campbell's Act, Lord (1846), 141, 142.
Canada—
  Factory Laws in, 199–201.
  Rejection of immigrants to, 126, 127.
  Strike legislation in, 387.
Cape of Good Hope, Shop Acts in, 200, 201.
Capital, 13–47.
Capital, requirements of, 449.
Capital and labour, 448, 449.
Capital and strikes, 446, 447.
Capital in U.S.A., 37–39.
Capitalism, transformation of, 80–89.
Capitalists, small, in Germany, 33.
Carpenters, Amalgamated Society of, 462, 463, 469.
Cartells. *See* Kartells.
Casual labour, 486.
Casual labour, remedies for, 422, 423.
Census (1890–1900) of capital in U.S.A., 38–40.
Central (Unemployed) Body for London, 369.
Central schools, 110.
Chain-making, wages fixed by Trade Board, 523.
Changes, measurement of industrial, 375–384.
Checkweighmen, independent, appointed by miners, 467.
Children—
  Defective, in school, 421.
  Emigration of, 130, 131.
  In the labour market, 524–528.
  Medical inspection of, 419.
  School age of, 419–422.
  Under the Factory Acts, 184, 188.
Children Act (1908), 421.
Christian Socialists, 75.
Civic Association, National (U.S.A.), 388, 389.
Clarke, Nickolls, and Coombs, Ltd., London, co-partnership scheme of, 87.
Clothing trade, girls' wages in, 522.
Coal Mines (Minimum Wage) Act (1912), 156, 157.
Coal strike (1912), 434.
Coal trade, organization for settling wages in, 152.
Collectivists, motives of, 410.
Colleges, technical, 113.
Colonies, Factory Laws in, 198–202.
Columbia, British, Factory Laws and Shop Acts in, 199–201.
Combination, conditions of, 50–52.
Combination Acts, 456–458.
Combinations—
  Industrial, 48–69.
  International, 67, 68.
Commercial centres in evening schools, 113, 114.
Commission, Royal—
  On Defective Houses (1844), 272.
  On Friendly Societies, 247.

Commission, Royal—
  On Housing of the Working Classes, 275.
  On the Poor Laws, 372, 373.
Commissioners, Insurance, names of, 333.
Committees, Insurance, 334.
Communism, 362, 363.
Companies, Joint-Stock, in Germany and Hungary, 40, 41.
Companies, large, in United Kingdom, 58–60.
Compensation, employers' liability for, 141–149.
Compensation Act, Workmen's (1906), 143–148.
'Compressol' system of dealing with soil for building, 173.
Conciliation Boards, 385, 386.
Conciliation in labour disputes, 155.
Confédération Générale du Travail, 412, 413.
Conference of Friendly Societies, National, 258.
Conferences, shipping, 57, 58.
Congress, Trade Union, 466.
Congress of Trade Unions, International, 470.
Conseils de Prud'hommes, 384.
Consolidated Trades Union, Grand National, 459.
Conspiracy and Protection of Property Act, 466, 467.
Construction, factory, 158–182.
Consumption. *See* TUBERCULOSIS.
Contributions—
  Deposit, under Insurance Act, 331–333.
  To Unemployment Insurance, 490.
  Under Insurance Act, 316, 317, 338, 339.
Co-operative movement, 355.
Co-partnership—
  Labour, 69–91.
  Societies (numbers), 79, 80.
  Types of, 76–80.
Corners, 50.
Cost of living, 92–106.
County Friendly Societies, 233, 234.
Cradley Heath, wages fixed at, 523.
Criminal Law Amendment Act, 465, 466.
Cross Act, 274, 275.
Cyclical fluctuations of industry, 483–485.

DANGER from machinery, etc., in factories, 190, 191.
Dangerous and unhealthy trades, regulations about, 189–191.
Decasualization of labour, suggestions toward, 492.
Defective children in schools, 421.
Defoe, Daniel, on Friendly Societies, 225.
Depopulation, rural, 134, 135.
Deportation of immigrants, 124–127.
Deposit contributors under Insurance Act, 331–333.
Design of factories, 159, 160.
Destitution, National Conference on the prevention of, 430.
Development of the working classes, schemes for, 417–431.
Diseases—
  Industrial, 426.
  Notification of, 189, 190.
  Precautions against, in factories, 190, 191.
Disputes between employers and employed, 196.
Dockers' strike (1889), 470.
Docks, casual labour at, 486.
Doctors and the Insurance Act, 327–333.
Doherty, John, 458, 459.
Domestic servants, number of, 519.
Dorset 'martyrs,' 459.
Draughtsmen in works and factories, 210, 211.
Drawing office in works and factories, 210–213.
Dunraven Committee on Sweated Industries, 427.

EARNINGS, Board of Trade inquiry into: summary, 508, 509.
Earnings, efficiency, 504.
East End Emigration Fund, 129.
Economic causes of strikes, 443–446.

Economist's index numbers, 379, 380.
Education—
  And industry, 107–119.
  Elementary, 107–110.
  Higher, 111–115.
Efficiency wages, 504.
Eight hours day, 262, 263.
Emigrants (United Kingdom), destination of, 120, 121.
Emigration, 120–141.
  Agencies, 129–133.
  Overseas (figures), 120–129.
Employer—
  Contribution of, under Insurance Act, 338.
  Disputes of, with workmen or apprentices, 196, 197.
  Liability of, for compensation, 141–149.
Employers' Liability Act, 142, 143.
Employers' Unions, 149–157.
Employers and Workmen Act (1875), 196, 466, 467.
Employment—
  Chart (Board of Trade), 375.
  Exchanges, Metropolitan, 369.
  Hours of, in factories, 187–189.
Engel's law, 98, 99.
Engineers, Amalgamated Society of, 462, 469.
England—
  Housing in, 270–281.
  Labour co-partnership in, 75–80.
England and Wales, increasing population of, 303–305.
Entrepreneurs and wages, 497–499.
Errand boys, education of, 109.
Essen, housing of employees at, 401.
Evening schools, 113, 114.
Exchanges, Labour, 367–374.
Exits in factories, 185.
Expenditure under Insurance Act, 340.
Expenses of factories, 221–223.

FACTORIES—
  Hours of labour in, 263, 264.
  Regulations in, 183–198.
  Types of, 160, 161.
Factories and villages, model, 393–407.
Factory Act (1901), 263, 264.
Factory Acts, benefits from, 426, 427.
Factory construction, 158–182.
Factory Laws—
  Colonial, 198–202.
  Indian and Foreign, 202–206.
Factory legislation (United Kingdom), 183–198.
Factory management, 207–223.
Factory system, early history, 294, 295.
Federation of Trade Unions, General, 471.
Federation of Women Workers, National, 473.
Fencing of machinery in factories, 186, 187.
Fire, methods of dealing with, in factories, 179, 180.
Fire-escapes in factories, 185.
Fire-resisting construction of factories, 175–179.
Fitting shop in works, 219.
Floors of factories, 175–177.
Fluctuations in wages, 515.
Food prices in London, 105.
Foresters, Ancient Order of, 230, 237.
Foresters, Ancient Order of (numbers), 243.
Foster, Sons, and Co., Ltd., Padiham, co-partnership scheme, 87.
Foundations of factory buildings, 170–173.
Foundry, 217, 218.
Framework of factory buildings, 173–175.
France—
  Conciliation in labour disputes in, 388.
  Factory Laws in, 202, 203.
  Housing in, 281, 282.
  Labour co-partnership in, 70–75.
  Population of, 307, 308.
  Remedies for infantile mortality in, 419.
Friendly Societies, 224–260.
  And National Insurance, 311–313.

Friendly Societies—
  And old age pensions, 311.
  And the State, 239–241, 245–260.
  Numbers and financial position, 243–245, 251, 252.
Funds of trade unions, 465.

GALSWORTHY'S, John, *Strife*, 156.
Garden Cities, 140.
Garden Cities, by E. Howard, 276.
Garden City Press, Ltd., co-partnership scheme, 77.
Gas companies, co-partnership in, 80–83.
Gasworkers' and General Labourers' Union, 470.
General Federation of Trade Unions, 471.
Germans, inventions of, 302.
Germany—
  Conciliation in labour disputes in, 388.
  Factory Laws in, 202.
  Housing in, 283–285.
  Labour Exchanges in, 368, 369.
  Population of, 308.
  Trusts or combinations in, 60–63.
Gewerbegerichte, 384.
'Ghent' system of unemployment insurance, 489.
Giffen, Sir R., on capital, 41–45.
Gilbert Act (1782), 226.
Gilbert Bros., Nantwich, co-partnership scheme, 86.
Gilds, mediæval, suppression of, 224.
Girls, earnings of, 509.
Girls in the labour market, 516–524.
Glasgow—
  Housing in, 280.
  Strike in (1812), 456.
  United Baking Society, 79.
Godin Iron Foundry, Guise, co-partnership scheme, 72–75.

HALF-TIMERS, 527.
Hampshire Provident Society, 233.
Hampstead Garden Suburb, 277.
Hazell, Watson, and Viney, Ltd., employees' money in, 88, 89.
Health, provision for, in model factories, 397, 398.
Health Insurance, National, 310–342.
Health of children, need for improving, 419–421.
Health of workers under Factory Acts, 184, 185.
Hearts of Oak Friendly Society, 231, 243.
Heating of factories, 180, 181.
Hirst, F. W., on capital, 43.
Hobson, J. A., on trade fluctuations, 484.
Holidays in British colonies, 198.
Holidays in factories, regulations about, 188, 189.
Holland, Factory Laws in, 203, 204.
Hollesley Bay Training Colony, 136, 137.
Holloway, George, 234.
Home industries, revival in, 295.
Hornby *v.* Close, 465.
Horsfall, T. C., 276, 277.
Hours of labour, 261–266.
  In British colonies, 198.
  In factories, 187, 188, 208, 209.
Housing, 267–287.
Housing Act (1890), 275.
Housing and Town Planning Act (1909), 277.
Howard, E., on Garden Cities, 276.

IDEAL CLOTHIERS (Wellingborough), co-partnership scheme, 78.
Increases in wages, 511, 512.
Index numbers, 379, 380.
  Weighted, 380–383.
India, Factory Laws in, 205.
Industrial changes, measurement of, 375–384.
Industrial Commission (U.S.A.), 388.
Industrial diseases, 426.
Industrial peace, methods of, 384–392.
Industrial revolution, 292–299.
Industrial structure or methods, permanent changes of, 485.
Industrial syndicalism, 415, 416.
Industrial unionism, 413, 414.

Industrialism, history of, 288–309.
Industry, demands of, 115–119.
Infantile mortality, 417–419.
Injury by accident, 143, 144.
Instruction, technical, 114, 115.
Insurance, National Health, 310–342, 423–425.
Insurance against unemployment, 489–492.
Insurance Commissioners, names of, 333.
Insurance committees, local, work of, 334, 424.
International Congress of Trade Unions, 470.
International Mercantile Marine Co., 60.
Inventions, 289–292, 299–302.
  List of, 290–292, 299, 300.
Italy, Factory Laws in, 204.

JAPAN, Factory Laws in, 206.
Jevons, W. S., on trade fluctuations, 484.
'Junta' of trades unionists, 463.
Juvenile Advisory Committees (Board of Trade), 116.
Juvenile Friendly Societies, 237.
Juvenile labour, 373, 524–528.

KARTELLS, 53.
Kettering Clothing Manufacturers, co-partnership scheme, 77.
Kettle, Sir Rupert, 385.
Krupps, housing of employees at, 401.

LABOUR, history of, 342–349.
Labour, hours of, 261–266.
Labour, reserve of, 485, 486.
Labour, theories of, 349–354.
Labour and a monopoly price, 445–451.
Labour and politics, 354–367.
Labour co-partnership, 69–91.
Labour Co-partnership Association, 76.
Labour Exchanges, 367–374.
Labour Exchanges and unemployment, 488, 489, 491.
Labour market, women and children in, 516–532.
Labour M.P.'s, 471.
Labour movements, new, 408–416.
Labour Party, British, 471.
  Aims of, 356.
Labour Representation Committee, 471.
Labour statistics, abstract of, 382.
Labourers, skilled, requirements of, 117, 118.
Labourers, unskilled, requirements of, 117.
Lace-making, wages in, fixed by Trade Boards, 523.
Lancashire, women workers in, 518–520.
'Land, back to the,' 134, 135.
Land values and rent, 286, 287.
Laundries, regulations about, 192.
Leclaire, Maison, Paris, co-partnership scheme, 70, 71.
Letchworth Garden City, 140, 276.
Lever Bros., Ltd., co-partnership scheme, 81, 82.
Liberty and strikes, 437, 438.
Lift shafts in factories, 178.
Lighting of factories, 180.
Limited Partnership Act (1907), 86.
Living, cost of, 92–106.
Lloyd-George, Mr., and the doctors, 329, 330.
Lloyd-George, Right Hon. D., 312, 315.
Local Friendly Societies, 234.
London, food prices in, 105.
London County Council, housing under, 280.

MACDONALD, Alex., 466.
Machine shop in works, 218, 219.
Malthus on population, 350.
Management of factories, 207–223.
Manager, general, duties of, 210.
Manchester Unity. *See* ODDFELLOWS.
Manitoba, Factory Laws and Shop Acts in, 198–201.
Manorial system in England, 343.

Marginal wage, 499, 500.
Margin of idleness, 485, 486.
Marken, J. C. van, on an employer's duty, 406, 407.
Married women under Insurance Act, 318, 319.
Marshall, A., on hours of labour, 266.
Marx, Karl—
  On capital, 29.
  On labour, 351.
Masonry buildings for factories, 162, 163.
Massachusetts, capital in, 37, 38.
Master and Servant Act (1867), 464, 466.
Match girls' strike, London (1888), 470.
Mayland, Nipsell's estate, Essex, 137–139.
Meals, provision for, in model factories, 398.
Meals, provision of, for school children, 421.
Meal times in factories, regulations about, 188.
Measurement of industrial changes, 375–384.
Medical benefit to Friendly Societies, 242, 243.
Medical benefit under Insurance Act, 327–331.
Medical inspection of children, 420.
Medical men, obligation of, to notify disease, 189, 190.
Methods of industrial peace, 384–392.
Migration from rural districts, 133, 134.
Mill, John Stuart, on capital, 22.
Miners' Association, 460, 461.
Miners' Eight Hours Bill, 263.
Miners' Federation, growth of, 470.
Miners' Friendly Societies, 233.
Mines, Coal (Minimum Wage), Act (1912), 156, 157.
Minimum wage, 197, 442, 510, 511.
Mobility of labour, 504.
Model factories and villages, 393–407.
Money, L. G. Chiozza, on capital, 42, 43.
'Monograph' family, 94.
Monopolies—
  And the law, 450.
  Artificial, 50.
  Natural, 49, 50.
Monopoly price for labour, 445–451.
Mortality among infants, 417–419.
Movements, new labour, 408–416.
Mundella, Right Hon. A. J., 385.
Municipal—
  Emigration, 131, 132.
  Housing, 279–286.

NATIONAL ASSOCIATION FOR THE PROTECTION OF LABOUR, 458.
National Civic Association (U.S.A.), 388, 389.
National Deposit Friendly Society, 232.
Neison, F. G. P., 246, 249.
Nelson, N. O., Manufacturing Co., St. Louis, U.S.A., copartnership scheme, 87, 88.
Netherlands, housing in, 282, 283.
New Brunswick, Factory Laws and Shop Acts in, 199–201.
New labour movements, 408–416.
New South Wales—
  Compulsory arbitration in, 390.
  Factory Laws in, 198–202.
'New Unionism,' ideas of, 469, 470.
New Zealand—
  Compulsory arbitration in, 389, 390.
  Factory Laws and Shop Acts in, 198–201.
  Rejection of immigrants to, 126, 127.
Night work in factories, regulations about, 187, 188.
Nine hours day, 262, 467.
Non-interference in strikes, 435, 436.
Northcote Commission on Friendly Societies, 247.
Norway, Factory Laws in, 205.
Notification of diseases, 189, 190.
Nova Scotia, Factory Laws and Shop Acts in, 199–201.

ODDFELLOWS (Manchester Unity), Order of, 229, 230, 237, 243, 250.
Old age pensions, 311, 312.
Ontario, Factory Laws and Shop Acts in, 198–201.
Open-air schools, 421, 422.
Organizations of employers, history of, 149, 150.
Osborne judgment, 472.
Outworkers, regulations about employment of, 192, 193.
Overtime, 187, 192.
  In British colonies, 198, 199.
Owen, Robert, 231, 232, 352, 393, 459.

PALGRAVE'S, Sir R. Inglis, weighted index numbers, 381, 382.
Paris, cost of living in, 104.
Paris, rebuilding of, 281, 282.
Parliament, Labour members in, 471.
Parliamentary Committee of Trade Unionist Congress, 466.
Parliaments, European, Socialists in, 366.
Partitions in factories, 177, 178.
Pattern shop in works, 217.
Pauperism, cause of, 486.
Peace, methods of industrial, 384–392.
Penalties under Factory Acts, 193, 194.
Pensions, old age, 311, 312.
Percentages, calculation of, 375, 376.
Philadelphia, housing in, 286.
Physical conditions of the working classes, 417–431.
Physical training in model factories, 400.
Physiocrats, 27, 349.
Picketing, 467.
Piece-wages, 494.
Piecework rates, system perfected, 467.
Pieceworkers, protection of, 193.
Politics, trade unionists and, 463–466.
Politics and labour, 354–367.
Polytechnics, 114.
Pooling Associations, 52.
Poor Law Act (1601), 345.
Poor Law children, emigration of, 131.
Poor Law Commission—
  On boy labour, 525.
  On unemployment remedies, 488, 489.
  Report of, 428.
Population—
  Growth of, 303–307.
  Of large towns, 306.
  Tables, 273, 303.
Port Sunlight, description of, 402, 403.
Power loom, 294.
Pratt, Tidd, on Oddfellows, 230.
'Present value,' 253.
Prevention of destitution, National Conference on, 430.
Price Associations, 52.
Proprietary Articles Trade Association, 57.
Protection of Labour, National Association for the, 458.
Provision of meals for children, 421.
Public Health Act (1875), 274.
Pullman model village, U.S.A., 405, 406.
Purchasing department in works and factories, 213–217.

QUARTILES, 378, 379.
Quebec, Factory Laws and Shop Acts in, 199–201.
Queensland, Factory Laws and Shop Acts in, 198–201.
Quet, or unit of consumption, 98.

'RAIL POOL,' 67.
Railway Servants, Amalgamated Society of, 470.
Railwaymen's Friendly Societies, 233.
Railwaymen's strike (1911), 152, 153, 441.
Ratcliffe, Henry, 246.
Rational Association, 231, 232.
Rechabites, Independent Order of, 230, 243.
Recognition of trade unions, 443, 444.

Recreation in connection with model factories, 400.
Regulation of strikes, 451–453.
Reinforced concrete buildings for factories, 168–170.
Remedies for unemployment, 487–492.
Rent, theory of, 286, 287.
Reserve of labour, 485, 486.
Reserve values, 319–324.
Rhenish-Westphalian Coal Syndicate, 61, 62.
Ricardo on labour, 350.
'Right to strike,' 434–443.
Robertson, G. Stuart, on Insurance Act, 336, 337.
Roofs for factories, 175–177.
Rose Act (1793), 226.
Royal Mail Steam Packet Co., 60.
Rural—
  Depopulation, 133, 134.
  Housing, 280, 281.
Rural settlers, qualifications for, 135.

Sabotage, 413.
Safety of workers under Factory Acts, 184, 185.
Sailing accommodation for emigrants, 124.
Sales Associations, 53.
Salt, Sir Titus, Bart., and model villages, 393.
Salt Union, United Kingdom, 59.
Salvation Army—
  Emigration work, 130.
  Small holdings, 139, 140.
Sanatorium benefit under Insurance Act, 327.
Sanitary accommodation in factories, 181, 182.
Sanitation in Factory Acts, 185, 186.
Sauerbeck's index numbers, 380.
Scholarships to secondary schools, 111.
School, attendance at, 108–113.
School age of children, 108, 419–422.
Schools—Central, 110.
  Evening, 113, 114.
  Open-air, 421, 422.
  Secondary, 111, 112.
  Trade, 112.
Schwabe's law, 99.
Science in industry, 288, 289.
Scotland, increasing population of, 304.
Seasonal unemployment, 481–483.
Secondary schools, 111, 112.
Secretary of company, duties of, 210.
Selborne, Earl of, on Friendly Societies, 256.
Self-help Emigration Society, 129, 130.
Servants, domestic, 519.
Shaftesbury, Earl of, 262.
Shaftesbury, Earl of, Housing Act of 1851, 272.
Sheffield outrages, Commission on, 464, 465.
Sherman Act, 1890 (U.S.A.), 64.
Shipping trusts, 57, 58.
Shop Acts—
  In British colonies, 200, 201.
  In United Kingdom, 197, 198.
Shop Clubs Act (1902), 196.
Single-story factories, advantages of, 161.
Sisters, Order of United, 236.
Site for factory, choice of, 158, 159.
Sliding scale for miners' wages, 470.
Slums, 278, 279.
Small Holdings Acts, results of, 140.
Smith, Adam—
  On capital, 15, 21, 22, 27.
  On labour, 349, 350, 439.
  Influence of, 346.
Smoke, elimination of, in model factories, 400, 401.
Socialism, 355–362, 366, 367.
Socialists, Christian, 75.
Societies, approved, under Insurance Act, 334–338.
South Africa, rejection of immigrants to, 126, 127.
South Australia, Factory Laws and Shop Acts in, 198–201.
South Metropolitan Gas Co., co-partnership scheme, 80.
Special schools, 421, 422.
Stairways in factories, 178.
Standard Oil Company, 51, 64.

State and Friendly Societies, 239–241, 245–260.
State duty towards strikes, 435, 436.
Steam engine, advances of, 296.
Steel Corporation, U.S.A., 41, 65, 66.
Steel-frame buildings for factories, 163–168.
Steel Syndicate, German, 62, 63.
Steel Trusts in Great Britain, 56, 57.
Stores in works and factories, 213–217.
Strife, by John Galsworthy, 156.
Strike, the general, 411, 412.
Strikes, 265, 432–453.
Structural details of factories, 170–178.
Sunday work in factories, regulations about, 188.
Sutton, W., on Friendly Societies, 249, 250.
Sweated industries, 523.
Sweated Industries, Committee on, 427.
Sweating, figures about, 427, 428.
Switzerland, Factory Laws in, 203, 204.
Syndicalism, 364, 365, 408–413.
Syndicalism, industrial, 415, 416.
Syndicalist, the, 415.
Syndicates, 53.
Syndicats, 409–411.

TAFT, W. H., message to Congress (1911), 67.
Tailoring trade, wages in the, 523, 524.
Tasmania, Factory Laws and Shop Acts in, 198–201.
Taylor, J. T. and J., Batley, copartnership scheme, 85, 86.
Technical—
  Colleges, 115.
  Instruction, 114, 115.
Ten Hours Bill, 261.
Test of unemployment, 374.
Textile industries, women in, 518, 519.
Thompson, W., on housing, 277.
Time-keeping in factories, 209, 210.
Time-wages, 494.
Tobacco Co., American, 66, 67.
  British-American, 68.
Tontines, 241, 242.
Tool room in works and factories, 219, 220.
Torrens Act (1869), 274, 275.
Town-planning movement, 275, 276.
Towns, large, in England and Wales, population of, 306.
Trade—
  Boards Act (1909), 197.
  Boards and women, 521–524.
  Disputes Act (1906), 433, 471.
  Journals, 461, 462.
  Schools, 112.
  Union Act (1871), 465.
Trade Unions, 454–480.
  And wages, 502.
  Finances, 477, 478.
  Membership, 473–476.
  Recognition of, 443, 444.
Trades—
  Councils, 463, 476, 477.
  Dangerous and unhealthy, regulations about, 189–191.
  Scheduled under Trade Boards Act, 522, 523.
Transport Workers' Federation, 416.
Truck Acts, 194, 195.
Trusts, 54–68.
Tuberculosis, fight against, 424–426.
Turgot—
  On capital, 20, 21.
  On labour, 349.

UNEMPLOYABLE, the, 487.
Unemployed Workman Act (1905), 369.
Unemployment, 481–493.
  Insurance, 489–492.
  Test, 374.
Unionism, industrial, 413–414.
'Unionism, New,' ideas of, 469, 470.
Unions, Employers', 149–157.
Unions, Trade. *See* TRADE UNIONS.
United Kingdom—
  Cost of living in, 100, 102–106.
  Trusts and combinations in, 55–60.

United Patriots, 231.
United Sisters, Order of, 236.
United States—
  Conciliation in, 388, 389.
  Factory Laws in, 205.
  Housing in, 285, 286.
  Inventions of, 301, 302.
  Model villages in, 407.
  Population of, 309.
  Rejection of immigrants to, 125.
  Trusts and combinations in, 63–67.
United Workers of the World, 413.
Universities, 113.
Utility of strikes, 440, 441.

VALUE of strikes, 446–450.
Ventilation of factories, 180, 181.
Victoria—
  Factory Laws and Shop Acts in, 198–201.
  Labour legislation in, 391.
Villages and factories, model, 393–407.
Voice of the People, 458.
Voix du Peuple, 412.

WAGES, 444, 445, 455, 456, 493–516.
  And strikes, 444.
  Calculation of average, 377, 378.
  Deductions from, 194, 195.
  Of women, 519–521.
Wages Board, Joint, 387.
Wages Boards in Victoria, 391.
Wages Fund theory, 352, 505, 506.
Walker, F., on capital, 19.
Walls of buildings for factories, 173–175.
Walsall Locks and Cart Gear Co., Ltd., co-partnership scheme, 76, 77.
Wealth, total, of United Kingdom, 43–45.
Wealth of Nations, 15.
Western Australia, Factory Laws and Shop Acts in, 199–201.
Whitney's saw-gin, 301.
Whitworth, Sir Joseph, 297.
Widows in the labour market, 517, 518.
Women—
  And the Factory Acts, 184, 187.
  And trade unions, 472, 474, 475.
  Earnings of, 509.
  In Friendly Societies, 226, 227.
  In the labour market, 516–524.
  Married, and the Insurance Act, 318, 319.
  Wages of, 502, 503, 519–521.
Women Workers, National Federation of, 473.
Women's Friendly Societies, 235–237.
Wood, G. H., estimates of wages, 512, 513, 515.
Workers, health and safety of, under Factory Acts, 184, 185.
Workers of the World, United, 413.
Working classes, physical condition of, and schemes for development, 417–431.
Working hours in factories, 208, 209.
Workmen, disputes with employers, 196, 197.
Workmen's Compensation Act (1906), 143–148.
Works manager, 210.
  Office of, 220, 221.

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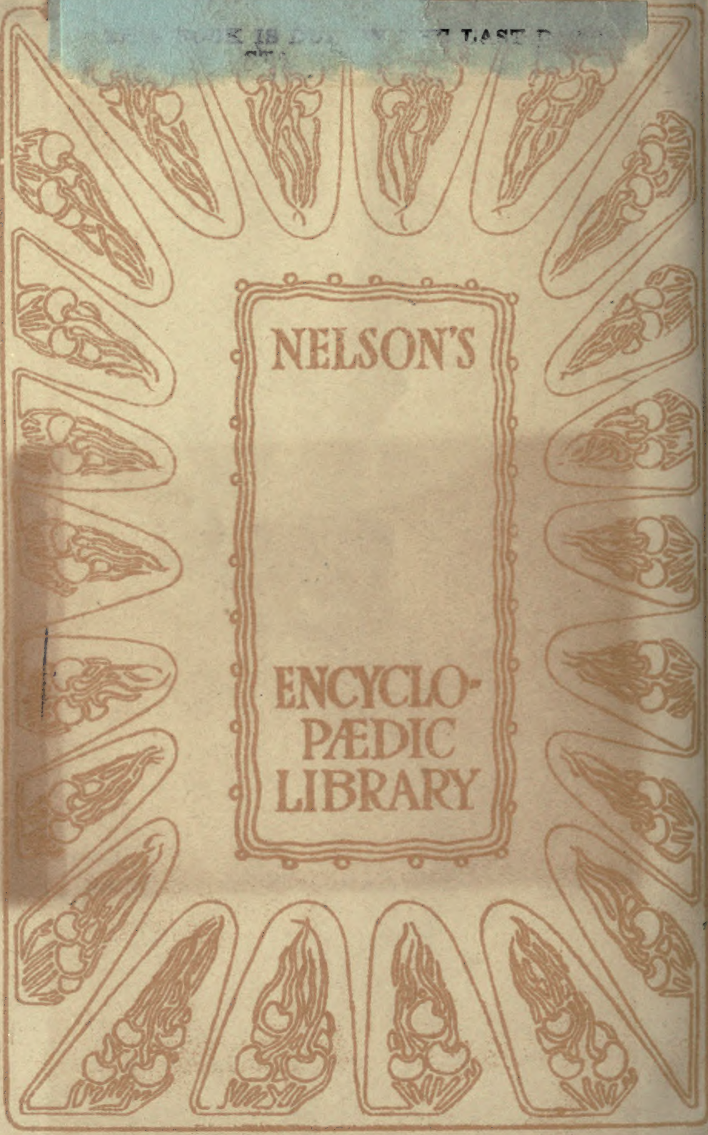

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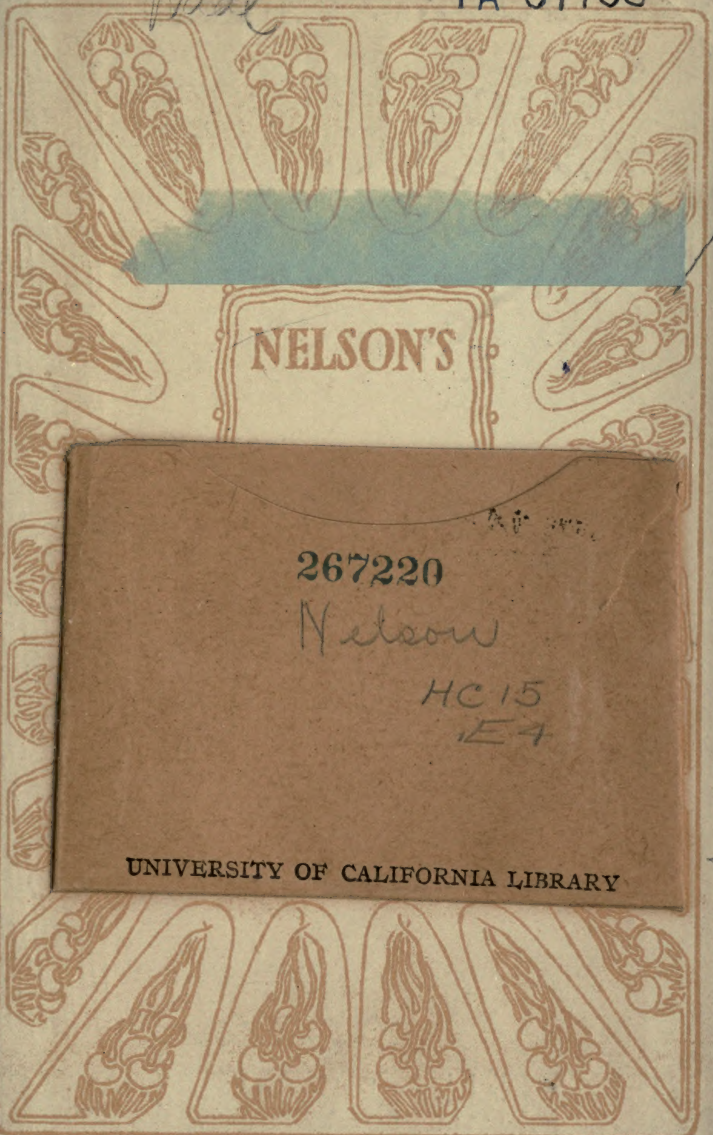

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